ELEMENTS

OF

MIDWIFRY.

Containing the moſt Modern and Succeſsful

METHOD OF PRACTICE

IN

Every different KIND of LABOUR.

WITH

A ſhort HISTORY of the ART of MIDWIFRY,

AND

An Anſwer to a CASUISTICAL LETTER, on the Conduct of ADAM and EVE, at the Birth of their firſt CHILD.

By J. ASTRUC,

Profeſſor Royal of PHYSIC, in the Univerſity of PARIS, and Phyſician to the King of FRANCE.

Tranſlated, with ADDITIONS and explanatory NOTES,

By S. RYLEY,

Member of the Corporation of SURGEONS in LONDON.

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MDCCLXVI.

PREFACE.

I WAS appointed by the royal faculty of phyſicians at Paris, in 1745, to give a courſe of lectures on the art of midwifry, which was intended to be eſtabliſhed in the ſchools of phyſic, for the uſe of women who practis'd midwifry, and ſtill ſubſiſts. I conſented without difficulty, though I had only a general knowledge of this ſubject, ſuch as every phyſician who likes his profeſſion ought to have of every branch of medicine, even thoſe which he does not practiſe; but as this courſe of lectures was not to commence within ſix months, I profited by this delay, and read over all the treatiſes on the Art of Midwifry, which have been publiſhed theſe thirty years, either in Latin or French.

I found in almoſt all, weighty, uſeful, important, and praiſe-worthy matter; but theſe treatiſes were written without order or method, full of uſeleſs circumſtances, repetitions, vague or ill-turned obſervations, in which the authors ſought to avail themſelves of an ill-placed and miſtaken learning, or dwelt on difficult queſtions in phyſic, which they did not underſtand, and which certainly

depreciated the reſt of their work. In this manner the greateſt part of theſe voluminous works are compoſed, in which what is uſeful and conformable to truth, is buried in a heap of frivolous or foreign matter: nevertheleſs, ſome are to be excepted, but a very few, which are compoſed with order and preciſion, in which nothing but what is uſeful is met with, and the author appears much ſuperior to his ſubject.

I brooked all theſe diſguſts, I read theſe works attentively, collected every thing which I thought uſeful from them, compared their different methods of practice, and choſe that which appeared to me the beſt and moſt authorized: And after this manner made a compilation, which ſerved, to make uſe of the expreſſion, as the ground-work of my public lectures, which were well received.

I was appointed to the ſame employment the two following years, and thereby I improved what I had before collected. New lectures, new extracts, new reflections, which rendered my firſt compilation more extenſive, and in my opinion much better.

I had forgot them, and did not think of putting them to any uſe, till it was repreſent-

ed

ed to me, that inſtructions were to be met with for midwives in Paris, and perhaps in great cities; but there certainly were none to be had in ſmall cities, and eſpecially in the country; that there was not even any work adapted to their capacity, whence they might learn at leaſt the principles of their profeſſion; that they had only an old method of practice, which was tranſmitted from hand to hand; and that it was a ſad thing to ſee the young midwives obliged to purchaſe, by the moſt ſervile compliances, what the old ones were willing, or capable of communicating, which was frequently nothing at all, and always very little at moſt.

They endeavoured to perſuade me, that the lectures which I had given in the ſchool of phyſic to the midwives of Paris, would be a very uſeful work for country midwives, if I would give myſelf the trouble to put them in order; but I could not reſolve to do it. The publication of my treatiſe on *the Diſorders of Women*, determined me thereto. I imagined this work would be incomplete, if I did not add a treatiſe on child-birth, which is one of the moſt common diſorders incident to women. I therefore examined my old collection, and after having corrected it, and made

the neceſſary alterations and additions, compoſed therefrom the preſent work.

In doing this I determined to obſerve three things, which I think eſſential in every *didactic* work, that is to ſay, wrote to inſtruct.

Firſt, to follow an exact method, a regular order of putting every thing in its proper place, to begin by the eaſieſt, and then paſs to thoſe which are more difficult, to leave nothing behind which has not been ſufficiently explained. By this means the reader paſſes without ſtopping, from a difficult chapter to one ſtill more difficult, and comes to underſtand without difficulty the moſt obſcure points of the ſubject which he ſtudies. *Ordinis hæc virtus erit.*

Secondly, to conform myſelf to the advice of Horace, who ſays, *whatever you direct, be brief.* With this view I have retrenched all digreſſions, uſeleſs circumſtances and reflections, and have confined myſelf to what was eſſential only to the practice I have given an account of. By this means the attention not being taken off, entirely buſies itſelf with the object before it, and comprehends it the better.

Thirdly,

Thirdly, to be clear, this quality is abſolutely neceſſary in a *didactic* work, deſigned for women, who are not very capable of comprehending a difficult and obſcure way of reaſoning. On this account I have taken care to make uſe of a ſimple ſtile, to employ ſhort and uninverted periods only, and take every word in its natural ſignification, without any metaphor.

If I have ſucceeded by this plan, in giving a treatiſe on *the Elements of Midwifry, ſuited to the capacity of Midwives*, and which may ſerve for their inſtruction; I ſhall be better pleaſed with having made a uſeful compilation, than if I had publiſhed a work full of ingenious and new, but merely curious reſearches.

I have ſcrupulouſly adhered to the plan I propoſed, and if I have deviated therefrom, it is only in the ſhort *Hiſtory of the Art of Midwifry, and in the chapter on the Ceſarean Operation*, which may, perhaps, be thought too much loaded with quotations. But I could not diſpenſe therewith; there was no medium. I muſt either omit theſe two ſubjects, which I was of opinion I neither could nor ought to do, or I muſt treat them as I have done. Midwives may profit by what they underſtand,

and neglect the reſt which they do not, and which was not wrote for them.

I ſhall perhaps be blamed for not having treated more particularly the different kinds of difficult labour which proceed from the bad conformation of the bones of the pelvis, amongſt which the child's head is, as it were, locked in; but I have an excuſe ready.

This bad conformation of the parts, which occaſions difficult labours, is generally the conſequence of the parent's debauchery; it is ſeldom met with in ſmall cities, and is unknown in the country; and it is for the uſe of country midwives that this treatiſe is wrote.

Beſides, in theſe caſes dexterity alone is not ſufficient; particular inſtruments muſt be uſed, which midwives have not, and which the greateſt part of them are unacquainted with the uſe of. But if any of them are deſirous of being better inſtructed in theſe kind of labours, and the proper inſtruments, I would recommend to their peruſal *the Obſervations on the Cauſes and Accidents of moſt difficult Labours*, printed in 1747, and the ſequel of theſe Obſervations, printed in 1751, which I am ſure they cannot read without great improvement, if they can but underſtand them.

Laſtly,

Laſtly, I adviſe midwives to give leſs ſtrong caudle to women in labour, when labour is difficult and tedious. I know very well, that this cuſtom takes its origin from our country; the works of our antient authors are full of them; that it is by tradition midwives tranſmit them to one another, and that they form a great part of the knowledge of moſt of them. But theſe ſtrong caudles heat very much, frequently occaſion a fever, and cannot change the bad poſture of the child.

In this caſe, which is frequent, the midwife ſhould know how to turn the child, and deliver it by the feet; the operation is not difficult, eſpecially when performed early, while the womb ſtill remains moiſt, lax, and preſerves its lubricity; and if midwives are incapable of doing this, they ſhould not continue to follow their profeſſion.

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A

SHORT HISTORY

OF THE

ART of MIDWIFRY.

THE Hiſtory of the Art of Midwifry cannot be otherwiſe than ſhort, being reduced to ſome facts ſcattered amongſt ſeveral authors, whom we muſt ſearch to find them; but, however conciſe it may appear, it nevertheleſs informs us, firſt, By what perſons this art was exerciſed. 2dly, By what progreſs it received its improvement. 3dly, What were the particular treatiſes compoſed on this ſubject, which have in ſome manner detached the art of midwifry from Surgery. Theſe are the points which I propoſe to treat of in the following articles.

ARTICLE I.

By what perſons the art of midwifry was firſt exerciſed.

THE art of midwifry is almoſt as ancient as the world. When Eve, driven from ter-

reſtrial Paradiſe, brought forth children, ſhe had need of aſſiſtance, and could have no other than Adam; but when their poſterity multiplied, women gave each other mutual aſſiſtance in this caſe; until ſome of them, having greater reliſh or greater talents for this employment, applied themſelves more particularly thereto, and became true midwives, ſuch as they were at that time.

The firſt midwife, of whom mention is made under that name, aſſiſted at the ſecond labour of *Rachel*, the wife of Jacob (*a*). This midwife, to encourage her, aſſured her that ſhe would have a boy; but Rachel expired in labour. Another midwife is ſpoken of in Geneſis, on account of (*b*) the lying-in of *Thamar*, who was delivered of twins. But the moſt honourable mention of midwives is that in Exodus (*c*), when Pharaoh king of Egypt, who had a mind to deſtroy the Hebrews, commanded two midwives, named in ſcripture *Siphra* and *Phuha*, to deſtroy all the male children of the Hebrew women, which command they diſobeyed, and thereby deſerved a recompence from God. They were women alſo who aſſiſted the wife of Phineas, high-prieſt of the Jews (*d*), in an unhappy labour, occaſioned

(*a*) Geneſis, chap. xxxv. 16 and following verſes.
(*b*) Gen. chap. xxxviii. 27 and following verſes.
(*c*) Exodus, chap. i. 15 and following verſes.
(*d*) 1 Kings, chap. iv. 19 and following verſes.

occaſioned by the news of the taking of the ark, and the death of her huſband and father-in-law. In all theſe places midwives are called *mejalledeth*.

Among the Greeks women alſo aſſiſted at labours. *Phanarete*, the mother of *Socrates*, was a midwife. Plato ſpeaks at large of midwives, explains their functions, regulates their duty, and remarks, that they had at Athens the right of propoſing or making marriages (*a*). Hippocrates (*b*) makes mention of midwives as well as Ariſtotle (*c*), Galen (*d*,) and Aetius (*e*). This laſt even often quotes a woman named *Aſpaſia*, who was, according to appearances, a midwife.

Laſtly, *Moſchion*, a Greek author, indeed not very ancient in my opinion, frequently mentions them; they were called among the Greeks Μαῖαι, or Ἰατρομαῖαι, that is to ſay, Mamma, or Grand-mamma.

We are ſtill better acquainted with the cuſtoms of the Romans, and know that they had midwives only. The comedies of *Plautus* and *Terence* alone furniſh a proof thereof. We there ſee that they are always women who are called to aſſiſt perſons in labour. Beſides,

(*a*) In Theæteto. (*b*) In his Diſeaſes of Women, b. I. p. 76. and 93. according to the edition of Linden.

(*c*) Hiſt. Animals, b. 7. c. 10. (*d*) In his Comment. 5. Aphoriſm, 51. and 62. on the natural faculties, b. 3. c. 3.

(*e*) Tetrabibl. 4. ſec. 4. c. 22.

Pliny ſpeaks often, in his Natural Hiſtory, of midwives and their duties, and names two, *Sotira* (a) and *Salpe*, who apparently had the greateſt reputation,

Laſtly, we find in *Gruter* (b), *Reineſius*, and *Gaſpar Bartholine* (c), many ſepulchral inſcriptions, in which mention is made of midwives, who are there named, and whoſe Latin name is always ſpelt with a *p*, *opſtetrix*; which ſeems to prove, that this word is derived from *ops*, *opis*, *Anglicè* help, and *ſto* for *præſto*, *Anglicè*, to afford, and ſignifies *a woman who aſſiſts*.

The ſame cuſtom prevailed in the fall of the empire. *Marcellinus* aſſerts, that *Euſebia*, wife of the emperor *Conſtantius*, ſon of *Conſtantine* the Great, jealous of the fruitfulneſs of *Helen* her huſband's ſiſter, wife of *Julian*, named the Apoſtate, prevailed on the midwife, who was to deliver her in Gaul, where her huſband commanded, to kill the child of which ſhe was delivered, by cutting its navel, that is, the navel-ſtring, too ſhort.

We may refer to this time, though much leſs ancient, a phyſician, whoſe works divided into three books, have been publiſhed under different names; though I think his right name was *Theodoſius Priſcian*. This phyſician appears to have lived about the eighth century from

(a) B. 28. c. 7. b. 37. c. 10. (b) 35 Letter to Rupért.
(c) In his Expoſition of the Old Cuſtoms in Childbirth, p. 37 and 38.

from Chriſt. He addreſſes the third book of his works, intitled *Gynæcea*, to *Salvina*, according to the Edition of *Baſil*, or to *Victoria* according to the *Straſburgh* Edition. But this comes to the ſame point with reſpect to the ſubject we treat of; for it appears by the words of *Priſcian*, that the perſon was a midwife to whom this book was addreſſed. Laſtly, a woman named *Trotula*, who appears to have lived in the thirteenth century, and who I think was a midwife, (as ſeems proved by the work itſelf) compoſed a treatiſe, which is to be looked upon as the firſt particular treatiſe on midwifry.

It is certain that ſince that time, all known and civilized nations have admitted women only to aſſiſt women in labour. We have concluded this, with reſpect to the Jews, Greeks, and Romans, from the female names which were given theſe perſons, and denote their ſex; we may conclude the ſame, and for the ſame reaſon, of the European nations.

The perſons who aſſiſt women in labour, facilitate delivery, and receive the children at their birth, are called in Spain, *comadrè*; in Italy, *comaré*; in France, *ſages femmes*; in England, midwives; in Germany, *Hebammen*; in Wales, where the ancient Celtic language ſtill ſubſiſts, *mamdiegues*. All theſe names, which are feminine, prove that women only were employed for this office.

Not but there were at this time, eſpecially in great cities, ſurgeons who applied themſelves to the art of midwifry, and made it their particular ſtudy. They were ſent for in difficult caſes, where the midwives found their incapacity; when the child was placed croſs-ways in the womb, and could not be rectified; when it was dropſical or monſtrous; when it was dead; or the body extracted, and the head left in the womb; when there was ſome fault in the conformation of theſe parts, &c. then the ſurgeon endeavoured by his ſkill to deliver the woman, by having recourſe to inſtruments uſeful in theſe caſes, ſuch as crotchets, crows-bills, and other inſtruments, which are deſcribed by *Ambroſe Parey*, after *Albucaſis*; but as theſe caſes happened but ſeldom, women remained in poſſeſſion of this buſineſs.

It is certain, at leaſt, that *Maria Thereſia*, wife of *Lewis* XIV. king of France, employed women only in her labours; and the example of the queen determined the conduct of the princeſſes and court ladies, and one after another of the ladies in the city. I have been aſſured, that the epocha of ſurgeons' being employed, does not go farther back than the firſt lying-in of Madam *De la Valiere*, in 1663. As ſhe deſired it might be kept a profound ſecret, ſhe ſent for *Julian Clement*, a ſurgeon of reputation. He was conducted

with the greateſt ſecrecy into an houſe where Madam *De la Valiere* was, with her face covered with a hood, and where, it is pretended, the king was concealed in the curtains of the bed. She had a good time, and was delivered at Paris, the 27th of December, 1663, of a boy, who was chriſtened Lewis of *Bourbon*, and died the 15th of July, 1668, without having been legitimated.

Clement was employed in the ſubſequent lyings-inn of the ſame lady, which, though not ſo ſecret, were as ſucceſsful; this brought men-midwives into repute, and put the princeſſes into the fancy of making uſe of ſurgeons on this occaſion; and as it ſoon became the faſhion, the name of *accoucheur* was invented, to ſignify this claſs of ſurgeons. Foreign countries were not ſlow in adopting this cuſtom, and in adopting it, adopted alſo the name of *accoucheurs*, though they had no ſuch word in their language. It is true, they have rather choſen in England to call them men-midwives.

I am aware, that in oppoſition to what I have juſt aſſerted, the authority of *Hyginus* may be alledged, of whom there is a book of Fables; in which work the author ſays, Fab. 274, "that the ancients had no mid-"wives, which made the women, through "modeſty, rather chuſe to run the riſque of "death, than make uſe of men on this oc-

" caſion. For the Athenians, he adds, had " forbid women and ſlaves to ſtudy phyſic, " that is to ſay, the art of midwifry. A " young woman, named *Agnodice*, deſirous " of learning this art, cut off her hair, " dreſſed herſelf in the habit of a man, and " became a ſcholar to one *Hierophilus*," whom we are not to confound with the celebrated *Herophilus*, who lived ſoon after *Hippocrates*, as many have done. " She afterwards fol- " lowed this buſineſs. The women at firſt " refuſed her aſſiſtance, thinking ſhe was a " man, but accepted thereof, when ſhe had " convinced them that ſhe was a woman."

" The phyſicians," continues the author, that is to ſay, the men-midwives, " finding " they were no longer employed, accuſed " *Agnodice* of being an eunuch, as it appeared " ſhe had no beard; and of debauching " women. On which the *Areopagus*, being " aſſembled, condemned her, tho' *Agnodice* " ſhewed them that ſhe was a woman. But " the moſt diſtinguiſhed women having ap- " peared in her defence, the judges revoked " their ſentence, abrogated the law, and per- " mitted women to learn the art of mid- " wifry."

But I deſire thoſe who think to avail themſelves of the authority of this *Hyginus*, to begin by reading his work. They cannot certainly attribute it to *C. J. Hyginus*, freed-

man of the emperor *Auguſtus*, and friend of *Ovid*, a learned grammarian, who lived when the Latin tongue was in its greateſt purity, and in whoſe praiſe *Suetonius* ſpeaks (*a*); whilſt this book of fables we are ſpeaking of, is full of ſoleciſms and barbariſms, and muſt be the work of an author who lived when the Latin tongue was corrupted; that is to ſay, about the ſeventh or eighth century, as *Berneſius* (*b*), *Voſſius* (*c*), and *Muncker* (*d*), have been of opinion; to whom we are indebted for an edition of this work. The contradictions met with in this book, give room to ſuſpect, that it is not the production of one hand, but of ſeveral. What credit then can be given to a like compilation, or more properly rhapſody, on ancient facts, advanced without proof, and deſtroyed by the formal teſtimonies of the authors which have been quoted; who affirm, that among the Greeks, the care of lying-in women was truſted to women only.

ARTICLE II.

By what ſteps the art of midwifry was improved.

TO improve an art, is to find out the means of exerciſing it more eaſily, and arriving

(*a*) On the Illuſtrious Grammarians. (*b*) B. III. of various readings. (*c*) Of the Mathematics, p. 170, &c.
(*d*) In the diſſertation prefixed to the work.

ing at a method of performing its operations, either neater or better. It is the ſame with the art of midwifry; it was improved by inventing new practices, proper to render delivery eaſier and more certain: theſe methods I ſhall explain in their order.

The practice of tying the navel-ſtring, and cutting it above the ligature, is eſſential to the art of midwifry, and, in my opinion, reaches as far back as Eve. It is looked on as abſolutely neceſſary for the preſervation of the child, which perhaps may not be wholly exempt from prejudice; as will be ſeen in a diſſertation at the end of this work. But it is certain, that it is a practice generally received among all nations; whence it comes, that midwives, among the Greeks, were called Ομφαλοτόμοι, that is to ſay, cutters of the navel, or umbilical cord. Nevertheleſs, the prophet Ezekiel (*a*) is the moſt ancient author who mentions this circumſtance. It is true, that Ezekiel lived about the year of the world 3360, about 600 years before Chriſt, and is conſequently much more ancient than *Hippocrates*. This prophet ſpeaks of it occaſionally only, when, deſirous of ſhewing the ingratitude of Jeruſalem towards God, he compares its miſerable ſtate, when God took it under his protection, to that of a new-born child,

(*a*) Chap. xvi. verſes 4, 5, and 6.

child, which was about to be expoſed, and whoſe navel-ſtring was not cut.

The art of midwifry was ſcarcely improved at the time of *Hippocrates*; and *Hippocrates* himſelf was not much before his age. In his works, which are come to our hands, there are three, in which he treats of delivery: namely, his treatiſe *on the Nature of Children*; his books *on the Diſeaſes of Women*, and his little treatiſe *on the Exſection of the dead Child*. In theſe works, ſuppoſing they are his, which is not certain, with reſpect to the treatiſe *on the Diſorders of Women*, *Hippocrates* is acquainted with no other kind of natural labour, than that in which the head preſents; he condemns footling labour, as fatal to both mother and child (*a*): *but if its ſides or feet preſent, which oftener happens, the mother will have a difficult labour; for many of theſe periſh, either the children only, or together with their mothers.* He ſays elſewhere (*b*), *It is a ſad thing if the feet preſent, and frequently either the mother or child, or both, periſh.* He would have children turned and placed in a contrary poſition, which preſent with the feet (*c*); *but if the arm or leg, or both, of a living child, preſent, they muſt, as ſoon as diſcovered, be returned into the womb, and the child brought into the paſſage with its head downwards.*

(*a*) In his treatiſe on the Nature of Children.
(*b*) B. I. on the Diſeaſes of Women. (*c*) Ibid.

downwards. For this purpoſe, he adviſes to roll the woman on the bed, ſhake her, and make her jump (*w*): *Concuſſions are to be uſed, which may be procured by this method.* He propoſes the ſame expedients to procure the child's delivery (*x*); *by this method it behoves to ſhake her, &c.* and if they do not ſucceed, he adviſes to extract it with crotchets (*y*), and whatever happens, to diſmember it; whence we may eaſily conclude, that, if *Hippocrates* is the father of phyſic, he is not in the leaſt ſo of the art of midwifry.

On this art we have not the leaſt knowledge of the opinion of thoſe phyſicians, who lived after *Hippocrates*, until *Celſus*, who flouriſhed during the reign of the emperor *Tiberius*; becauſe, if they did write on this ſubject, their works have been loſt, and never came into our hands; but we meet in *Celſus*(*z*) (tho' according to appearance, he never practiſed phyſic) two very uſeful reflections for the progreſs of the art of midwifry.

The firſt is concerning the manner of opening and dilating the womb: "We muſt, "ſays he, introduce the fore-finger, well "moiſtened with hogs lard, into the mouth "of the womb, when it begins to open, and

"in

(*w*) B. 1. on the Diſeaſes of Women.
(*x*) On the Exſection of a Dead child. (*y*) Ibid.
(*z*) On Medicine, book vii. chap. 29.

" in like manner, afterwards a ſecond, and ſo " on, until all the fingers are introduced, " which are then to be uſed by ſeparating " them, as a kind of dilater, to diſtend the ori- " fice, and facilitate the introduction of the " hand, which is to act in the womb." There is but little in this invention, but he is the firſt who took notice of it, and ſince his time every body have made uſe thereof.

The ſecond reflection is much more important, ſince it teaches, contrary to the common opinion, " that children may be de- " livered by the feet eaſily and ſafely, with- " out crotchets, by taking hold of their legs." For which purpoſe, he adviſes, " to take " care to turn children which are otherways " placed in the womb, with their head or " feet downwards." It is true, *Celſus* ſpeaks of a dead child only, but it was eaſy to conclude therefrom, that the ſame practice might be uſed with ſucceſs to deliver a live child.

Nevertheleſs this was not done, and notwithſtanding the authority of *Celſus*, the old prejudice remained a long time: *Pliny*, who lived under the emperors *Veſpaſian* and *Titus*, was not in fact a phyſician himſelf, but in condemning footling labour, he atteſts the opinion of the phyſicians of his time. He aſſerts, as a known fact (*a*), that footling labour was

(*a*) Natural Hiſt. book vii. chap. 8.

was a preternatural kind of labour; he adds, that children which came into the world in this manner, were called *Agrippa*, that is to say, born with a great deal of difficulty. It would be endless to give an account of all the physicians who have been of this opinion. I shall therefore only quote some of the principal, as *Galen* (*b*), *Galeatius* of St. *Sophia* (*c*), *Bernard*, *Gordon* (*d*), *Eucharius*, *Rhodion* (*e*), *Mercurialis* (*f*), *Mercatus*(*g*), *James Ruef* (*h*), *Liebaut* (*i*), *Lazarus Pé* (*k*), *Varandus* (*l*), *Perdulcis* (*m*), and many others.

But however common this opinion was, it was never universally received; and several physicians of character rose up, who, without suffering themselves to be dazzled with the common prejudice, or seduced by the authority of *Hippocrates* and *Galen*, recommended and approved of footling delivery; such as *Aetius* (*n*), *Paul Ægineta* (*o*), *Moschion* (*p*), *Avicenna*,

(*b*) On the use of the parts, book xv. chap. 7.
(*c*) Coment. on *Rhasis*, fo. 82. (*d*) *Philon*, partic. 7. c. 16.
(*e*) On the birth of man, chap. iii.
(*f*) On the diseases of women, book ii. chap. 2.
(*g*) On the disorders of women, book iv. chap. 3.
(*h*) On women's disorders, book iii. chap. 2.
(*i*) On women's diseases, book iii. chap. 46.
(*k*) On women's disorders, book iii. chap 48.
(*l*) On the complaints incident to women, book ii. c. 8.
(*m*) Universal medicine, book xiii. chap. 14.
(*n*) Tetrabibl. c. iv. s. 4. c. 22. (*o*) On medicine, b. iii. c. 76.
(*p*) In Spach's collection, p. 10. no. 5.

Avicenna (*q*), *Serapion* (*r*), *Albucasis* (*s*), *Valescus de Taranta* (*t*), *De Roche* (*u*), *Alexander Benoist* (*w*), *Ambrose Parey* (*x*), and *Marinello* (*y*), who all recommend and approve delivery by the feet, when the child presents in this posture; and some of them advise to bring the child into this position in labours in which it presents badly.

This question then was a long time undecided, which is no matter of surprize, because it is difficult to destroy an old and very extensive prejudice; moreover, even in 1651, *Riverius*, a physician of reputation, condemned footling labour (*z*), and *Mauriceau* (*a*) remarks in the first edition of his book on *the Disorders of Pregnant Women*, printed in 1664, "*that many authors were still of opinion, that* "*when the child presented with its feet, it should* "*be turned to make it come with its head fore-* "*most;*" but after having observed, it was difficult, if not impossible, to execute this, he concludes, "*it is much better to ex-* "*tract the child by its feet when they present,* "*than to run the hazard of doing worse, by* "*turning it.*"

At

(*q*) Canon fen. 21. tract 2. c. 20.
(*r*) Breviary, tract. 5, c. 35. (*s*) Surgery, 2d part, c. 75.
(*t*) B. 5. c. 20. (*u*) On women's disorders, c. 27.
(*w*) B. 25. c. 36. (*x*) B. 24. of generation, c. 15, 33.
(*y*) On female disorders, b. 3. c. 11, 76.
(*z*) Practice of physic, b. 15. c. 18. (*a*) Book 2. c. 14.

At length reaſon prevailed; every body at preſent are of the ſame opinion; it is agreed, not only that the child ſhould not be turned when its feet preſent, but that, on the contrary, it ſhould be brought into this poſition, whenever it is badly placed for birth. This practice is looked upon as a fundamental rule of the art of midwifry, which it has much improved, by procuring an eaſy method of delivery in thoſe caſes, which were before very difficult, very laborious, and frequently fatal to the child. I ſhall ſay more on this ſubject in the parallel between that kind of labour in which the head preſents, and footling labour (*b*). If the old prejudice ſubſiſts ſtill in ſome meaſure, it is only in ſome remote corner, where truth has not yet found its way.

Uterine hemorrhages frequently happen to pregnant women, but of different kinds and different natures. Some proceed from the *vagina*; or if they proceed from the womb, it is only from parts to which the *placenta* is not attached, and conſequently do not at all concern pregnancy, or but very little.

Theſe kind of hemorrhages readily give way to bleeding, reſt, anodyne clyſters, a cooling and ſpare diet, opiates properly adminiſtered, and eſpecially to aſtringent medicines, uſed with prudence. With reſpect to this

(*b*) Book 2. chap. 3.

this kind of hemorrhage, conſult my treatiſe on the Diſorders of Women, book i. chap. 9. caſe 2.

It is not the ſame with another kind of flooding, which proceeds from ſome part of the *placenta*'s being looſened from the womb, through a fall, a falſe ſtep, a contuſion, compreſſion of the belly, or from ſome blow, jolt of a carriage, too great exertion of the voice, vomiting, cholic, violent cough, ſtrains, &c. In this caſe the venal appendages, which were connected with that part of the *placenta* which is ſeparated, adhering thereto no longer, empty the blood which they contain into the womb, and continue to do ſo without ceaſing, becauſe the *placenta* cannot adhere again to the womb, nor can the venal appendages contract themſelves while the womb remains diſtended by the child.

When this accident happens in the beginning of pregnancy, from the firſt month until the fifth, abortion follows near at hand, becauſe the *placenta*, as yet adhering but ſlightly, is eaſily ſeparated, and comes away with the child; conſequently, the womb being no longer diſtended, contracts itſelf, the venal appendages cloſe, and the flux of blood ceaſes.

The diſorder is much more troubleſome when pregnancy is farther advanced, about the ſixth or ſeventh month, and eſpecially at the eighth and ninth: as at this time the *pla-*

centa adheres ſtrongly to the womb, it is ſeldom that it is entirely ſeparated, and ſtill more impoſſible for it to adhere again: thus there can be no hope of a miſcarriage to terminate the diſorder. The hemorrhage continues the more violent, becauſe the womb being diſtended by the bulk of the child, keeps the venal appendages always dilated, and prevents their contraction; but tho' continual, it undergoes ſome variations; for ſometimes it is more violent, when the vivacity or uneaſineſs of the patient, bad nights, too rich a diet, or accidental fever encreaſe it; and ſometimes leſs, when a good night's reſt, a ſpare and low diet, a perfect tranquility of body and mind, bleeding, and aſtringent medicines properly adminiſtered, conduce to leſſen it. Nevertheleſs, in ſpite of theſe variations, as it is continual, it at length weakens both mother and child, in an alarming manner; in vain are bleedings repeated, in vain are medicines, the moſt celebrated in this caſe, adminiſtered; nothing ſucceeds, and the diſorder grows worſe and worſe.

It ſeems, if a juſt idea of this diſorder was conceived, it muſt be clear, that to remove it, the child, which keeps it up, ſhould be delivered; but this was never thought of, at leaſt I don't remember to have read any thing thereof in antient authors. It is to a lucky accident that we owe the diſcovery of

a re-

a remedy for this obſtinate hemorrhage, and this is not the only inſtance that chance has afforded uſeful knowledge in phyſic. This remedy conſiſts, as muſt have been gueſſed, in immediately delivering the woman, tho' ſhe has not yet gone her full time. By this means the womb, being freed from the child, contracts itſelf, the venal appendages ſhorten, and at length cloſe; the blood flows leſs plentifully, and after ſome days entirely ſtops, and the diſorder is cured.

It is to a midwife named *Louiſa Bourgeois*, or *Bourſier*, midwife to Mary of Medicis, wife of Henry IV. king of France, we are indebted for this diſcovery; ſhe compoſed a ſmall treatiſe on *barrenneſs*, *abortion*, *fruitfulneſs*, *labour*, *and diſeaſes of women*, printed at Paris, 12^mo^. in 1609; in which ſhe relates this matter ſo ingeniouſly, that ſhe deſerves a hearing.

" (*c*) When a woman, ſays ſhe, has an im-
" moderate diſcharge of blood during preg-
" nancy, which brings her very low.... we
" muſt proceed to extract the child with the
" hand..... I have practiſed this with the
" conſent, and in the preſence of the famous
" M r. *Le Febure*, and of Mr. *Le Moine*, and
" Mr. *De Liſle*, very learned phyſicians; alſo
" foraſmuch as I had ſeen theſe diſcharges

(*c*) Chap. 5.

" of blood cauſe ſuddenly the death of both " mother and child. I performed this on " the wife of a counſellor of parliament, who " was in the ſixth month of her pregnancy; " the child lived two days, and ſhe had ſeve- " ral children afterwards: the phyſicians were " of opinion, that if it had been deferred an " hour longer, both mother and child would " have been loſt. Mr. *Le Febure* gave an " account of this practice, in the public ſchool " for phyſic, and recommended the perſons " preſent to proceed in the ſame method, " becauſe he had often ſeen women loſt for " want of its having been done.

" Of this kind of hemorrhage, which I " have juſt now mentioned, ſhe ſays, a little " lower, the famous Madam *d'Aubray* died, " wife of Mr. *d'Aubray*, who was provoſt of " the merchants; as alſo the dutcheſs of " *Montbazon*, and many others. Knowing " the diſcharge of blood is kept up by the " diſtenſion of the womb from the child, " and having obſerved it ceaſe as ſoon as the " woman was delivered; I have made uſe of " the foregoing practice, which I knew too " late to my ſorrow, for the preſervation of " thoſe I have named."

I have deſcribed the manner in which delivery ſhould be executed on this occaſion, in the body of this work. (*d*) The midwife, after having

(*d*) Book 4. chap. 4. art. 2.

having well moiſtened the *vagina* and mouth of the womb with freſh butter or pomatum, ſeveral times, muſt introduce her right hand, well moiſtened with pomatum alſo, and endeavour to dilate the orifice of the womb, by introducing her five fingers one after another, and making uſe of them as a *ſpeculum uteri*; ſhe muſt continue this dilatation by degrees, till ſhe can paſs her hand into the womb; then the membranes are to be ruptured, the child turned, and delivered by the feet. If the *placenta* is ſeparated, and comes away with the child, the labour is over, and nothing more remains than to put the woman to bed; but if the *placenta* ſtill adheres to the womb, the navel-ſtring is to be divided, after having made thereon a double ligature, and the child given to a proper perſon to take care of it, while the midwife endeavours to extract the *placenta*, which ſhe will eaſily effect, becauſe the ſide that is already ſeparated allows an hold, which can be uſefully employed.

I ſhall not diſſemble, that a forced labour, ſuch as has been juſt deſcribed, is painful, and frequently even fatal; but when practiſed in the laſt months of pregnancy, as is commonly the caſe, the pain and danger are not ſo great as in a leſs advanced term; on the one hand, the womb has then acquired its whole extenſion, and in this ſtate the mouth of the womb dilates the more eaſily; and on the other hand,

the preceding loſs of blood, by emptying the veſſels of the womb, has rendered the membranes thinner, more lax, and more extenſible, which occaſions the mouth of the womb to give way more eaſily. This preceding loſs of blood procures alſo another advantage; it keeps the womb from the inflammation to which it would otherwiſe be expoſed, notwithſtanding which the patient muſt loſe blood from the arm, if the ſupervening fever requires it.

Nevertheleſs, however painful this kind of delivery may be, or whatever danger may attend it, we are forced to practiſe it in a circumſtance, where, if it is not uſed, the death of both mother and child is inevitable; and it is the practice of every body at preſent in this caſe. Tho' this practice regards pregnancy only, yet as pregnancy principally comes under the cognizance of men-midwives, it may be reckoned a third ſtep towards the improvement of the art of midwifry.

The uſe of crotchets to extract dead children muſt have been eſtabliſhed before the time of *Hippocrates*, ſince he ſpeaks of it as a general cuſtom (*e*); but it is in *Celſus*, (*f*) that we find a circumſtantial account of their uſe in extracting dead children, and of the danger there was of the crotchets ſlipping, (which

(*e*) On Women's Diſeaſes, b. 1. p. 96. Linden's Edition.
(*f*) On Medicine, book 7. chap. 29.

(which frequently happened) and tearing the mouth of the womb, which might be of dangerous conſequence to the woman.

The phyſicians who have wrote ſince *Celſus*, have recommended the ſame practice, tho' they were convinced of the danger which *Celſus* had warned them of; and ſeveral of them have even propoſed to uſe two crotchets, one on each ſide, to extract the child more in a ſtraight line, which muſt increaſe the danger very much. They have even not been contented with crotchets only; *Rueff* invented a crane's bill and nippers; and *Ambroſe Parey* an inſtrument which he called the griffin's claw; but I fancy they invented them only to ornament their works with the copper-plates of theſe inſtruments, for it ſeems to me impoſſible that they can have ever uſed them.

The art of midwifry was in this ſtate at the end of the laſt century, with reſpect to the extraction of a dead child, a falſe conception, or child's head ſeparated from the body. But about this time ſeveral kinds of inſtruments of a new ſhape began to be invented, which were called *forceps*, to diſtinguiſh them from the common inſtruments, with which they had not the leaſt likeneſs. Operators every where applied themſelves earneſtly to improve this inſtrument, and the Engliſh, Dutch, and French, as if in emulation of each other,

invented ſeveral kinds of them, which were all uſeful, but had alſo faults.

I have examined the conſtruction of almoſt all of them, and that which Mr. *Levret* propoſes in his *Obſervations on the cauſes and accidents attending moſt difficult labours*, ſeems to me the beſt and moſt certain. I have not tranſcribed its compoſition, nor the manner of uſing it, becauſe I could wiſh Mr. Levret's book, which cannot be read without pleaſure and advantage, was peruſed by every one. With the forceps and dexterity, the moſt difficult labours may be ſurmounted; whether to extract a dead child, an head ſeparated from the body, a falſe conception, or, which is ſtill more difficult, a child whoſe head is lodged between the ſuperior part of the *os ſacrum*, and the ſymphyſis of the *os pubis*.

This is the laſt degree of perfection to which the art of midwifry is arrived, and is of the greater importance, from having baniſhed the uſe of crotchets, which were always dreadful, and frequently fatal.

ARTICLE III.

Which were the firſt particular treatiſes compoſed on the art of midwifry.

It may be ſeen by the paſſages which I have quoted from antient authors, in the two firſt

firſt articles, that all the old phyſicians who publiſhed practices of phyſic, have treated of the art of midwifry, as appertaining to the ſubject they treat of. It may have been even obſerved, in the extract from *Celſus*, quoted in the preceding article, page 28, that this author gives the name of phyſician to the perſon who takes upon him to extract the dead child from its mother's womb. This ſhews what has been proved, beſides, from many other authorities, that phyſic and ſurgery were practiſed by the ſame perſons, who embraced the whole extent of the healing art: And it is not to be wondered at, the knowledge they had of each of theſe branches was ſo confined, that the ſame perſons might ſuffice to learn and practiſe them.

But by means of ſearching into theſe ſubjects, their obſervations were ſo multiplied, ſo many new diſorders were obſerved, and in the ſame diſorders ſo many different kinds diſtinguiſhed, ſo many different cauſes, ſuch different indications, which required different aſſiſtants, that the ſame perſons could no longer ſuffice; they were therefore forced to limit the extent of this profeſſion, and ſeparate the practice of ſurgery from the reſt of phyſic. This diviſion had been ſeveral times attempted, and more than once ſuſpended; but at length, for about three hundred years, ſeems to have been fully compleated.

It has been ſeen in the firſt article, that the art of midwifry, though it ſeems to have made a part of ſurgery, was always exerciſed by women. Ever ſince it has become a faſhion to employ men-midwives, theſe perſons, tho' taken from the body of ſurgeons, have attached themſelves to this branch ſo particularly, that they ſeem to have renounced the reſt of ſurgery. Thus the art of midwifry has for a long time been conſidered as a particular art, which is, perhaps, more true at preſent, than it has ever been; and I think it is an advantage to the public.

In proportion as the practice of midwifry was ſeparated from the reſt of the healing art, and became a particular ſtudy, it was neceſſary to detach every thing which concerned it from the body of ſurgery, and compoſe particular treatiſes thereof. It is of thoſe treatiſes, which I look on as the firſt elements of this art, that I propoſe to treat in this article; but I ſhall mention only the firſt of theſe treatiſes, and that conciſely.

The moſt antient treatiſe of this kind is that of *Moſchion*, which has been already ſpoken of: He was a Greek author, whoſe antiquity it is difficult to determine; but I am of opinion, cannot be placed farther back than the eighteenth century. *Geſner* firſt publiſhed this work from a manuſcript, full of faults and chaſms, which he endeavoured

to

to correct and ſupply, but badly enough. He recovered ſome time after, an old tranſlation of this work into Latin by a Jew, which was of ſervice to him in correcting ſome parts of his Greek manuſcript; but this tranſlation itſelf was very faulty, very defective, and not at all proper to render the original Greek perfect. There are in great libraries ſeveral manuſcripts of this work, and it would be of ſervice to the public to give from them a more compleat and correct edition, which would ſerve at leaſt to inſtruct us in what was then known relative to the art of midwifry.

The ſecond particular work on the art of midwifry is that of *Trotula*, wrote in Latin. I cannot tell why *Geſner* attributed it to one *Eros*, a freed-man of *Julia*, daughter of the emperor *Auguſtus*; for every thing proves, that it is the work of a midwife of *Salernum* in *Italy*, who gave herſelf the name of *Trotula*, and lived, as I imagine, in the thirteenth century. In this book the art of midwifry is treated of with ſome particularity, but it treats alſo of ſeveral diſorders of women. It gives an account alſo of ſeveral kinds of paint which the women of *Salernum* made uſe of, as this author relates.

This work, as well as the preceding, has been inſerted in the collections of *Gaſpar Wolph* and *Iſrael Spach*. It were to be wiſhed, there was a new edition thereof; not to learn

learn any thing new, for ſince their time the art of midwifry has been greatly improved, but to preſerve a chronological chain of the lights they ſucceſſively had in the art of midwifry.

I give the third place to the treatiſe which *Eucharius Rhodion*, a phyſician of *Frankfort* on the *Maine*, publiſhed in German. I have only ſeen a Latin tranſlation of this work, printed at *Frankfort*, in 1532, in 12^mo^. under the title of *A Treatiſe on Child-birth, and its Accidents*; but it appeared by the letter which the bookſeller at *Frankfort* writes to *Eucharius Rhodion*, ſon of the author, that this work had been ſeveral times printed before in *Germany*, and very favourably received.

This work contains twelve chapters.

1. *In what ſituation the child is placed in the womb, and with how many membranes it is ſurrounded.*

2. *What period of time the woman goes, and the difference between natural and preter-natural labours.*

3. *Of eaſy and difficult labours, and the manner in which the probability of an eaſy or difficult labour may be known.*

4. *What is chiefly to be done in delivery, and how women are to be aſſiſted in difficult labours.*

5. *The remedies which aſſiſt and render labour eaſy.*

6. *How the after-birth is to be extracted, if it does not come away of itself.*

7. *In what manner, and by what remedies, the various accidents which happen during or after delivery, are to be guarded against and removed.*

8. *Of abortion, and its causes, and in what manner to be prevented.*

9. *Of dead children; in what manner, and by what signs, they are known.*

10. *Of new-born children; their nourishment, disorders, and method of cure.*

11. *Of the milk and nurse, and how long the child should suck.*

12. *Of the various disorders and accidents of new-born children, and their method of cure.*

James Rueff, a surgeon at *Zurich*, printed there in quarto, in 1554, a work intitled, *On the Conception and Generation of Man*, divided into six books. The first contains six chapters, and treats of *the generation of man*; the second contains six chapters also, and treats *of the womb and its parts, and the situation of the child therein*; the third, *of labour, and the cure of disorders incident to lying-in women and children*, in six chapters. He treats in the fourth, *of the various kinds of preternatural labours, and the methods of remedying them*, in fifteen chapters. The author treats in the fifth, in six chapters, *of false conceptions, and other tumours of the womb, and of abortion.*

Lastly,

Laſtly, in the ſixth, in eleven chapters, he treats *of the different cauſes of barrenneſs*. The four laſt books belong to the art of midwifry, which occaſioned my mentioning this work. The author would have done well to have contented himſelf with publiſhing theſe laſt books, of which he was a competent judge; but he was deſirous of diſplaying his knowledge, in the two firſt books, on a ſubject too difficult for him.

I entertain the ſame opinion of a treatiſe publiſhed by *Ambroſe Parey*, firſt ſurgeon to three kings of France, intitled, *On the Generation of Man*; which makes the twenty-fourth book of his works, the firſt edition of which was publiſhed at Paris, in folio, in 1582. In this book we meet with an account of the conduct we ſhould make uſe of in the different kinds of labour, which is pretty good, according to the lights of his time; but which would be better, if what he ſays of labours was not ſmothered in an heap of difficult, uſeleſs queſtions, foreign to the ſubject he treats of, which was the prevailing paſſion of this author; who made a parade of his ſkill in the Greek and Latin languages, by quotations from ancient authors, who wrote in either of theſe languages; and took a pleaſure in treating of the moſt difficult points in phyſic, in the works which he compoſed, or rather procured to be com-

poſed; for when we ſee this parade in the writings of a ſurgeon, who was not a man of learning, it is very difficult not to believe the reproaches with which he was loaded, even in his life-time, of having procured ſeveral young phyſicians to compoſe his works for him.

I ſhall end with a book compoſed by *Louiſa Bourgeois*, called *Bourſier*, midwife to Mary of Medicis, queen of France, to whom ſhe dedicated it. This book contains fifty chapters: it was printed at Paris, in 12mo. in 1609, under the title of, *Obſervations on Barrenneſs, Abortion, Fruitfulneſs, Labour, and Diſorders of Women and new-born Children.* One may judge by the title, that what regards delivery, made but one part of this work, in which beſides there is not the leaſt order or method; but it is written with ſuch candour and ingenuity, as leaves not the leaſt doubt, but the author inſerted therein every thing ſhe knew; and it appears, ſhe was not ignorant of any thing that was known in her time.

Since that time, there has appeared a great number of treatiſes on this ſubject; which all the nations of Europe, as if in concert, have been eager to examine and improve. It would be difficult to give an account of all the works written in Latin or French; but it would be almoſt impoſſible to do it of thoſe which

which were publiſhed in England, Holland, Flanders, Germany, and Italy, the greateſt part of which I have never ſeen; but I have read enough of them, and eſpecially of the neweſt and moſt eſteemed, to preſume, that I have culled whatever is valuable from them: ſo that the work which I now publiſh, may be looked upon as an extract of theſe treatiſes.

The emulation with which this ſubject has been purſued for theſe ſixty years paſt, has ſo increaſed its progreſs, that the art of midwifry wants but little of having attained its utmoſt perfection, and its operations arrived to an almoſt geometrical certainty: and this is not ſurpriſing; for, after all, the art of midwifry is reduced to the following mechanical problem: "*An extenſible cavity, of a certain ca-*
"*pacity being given, to paſs a flexible body, of*
"*a given length and thickneſs, through an open-*
"*ing dilatable to a certain degree*;" which might be reſolved geometrically, if the different degrees of elaſticity of the womb; and ſtrength and weakneſs of the child; the greater or leſs diſpoſition of the blood to inflammation; and the greater or leſs degree of irritability of the nerves; did not occaſion that uncertainty, which phyſical facts conſtantly produce in all phyſico-mathematical queſtions.

THE

ELEMENTS

OF

MIDWIFRY.

CHAP. I.

Of the bones which form the pelvis, or baſon.

THE womb, which contains the child during pregnancy, is ſituated in the lower part of the belly, in a cavity ſurrounded on every ſide with bones, known by the name of the pelvis, or baſon. This ſituation is very convenient for both mother and child. For the mother, becauſe the child being ſupported underneath by the bones of the pelvis, ſhe is thereby enabled to carry the burthen the more eaſily. For the child, becauſe, being ſupported by theſe bones, it thereby gains the neceſſary liberty of ſtretching and moving itſelf upwards, where it is ſurrounded by the integuments of the abdomen only, which readily give way to its preſſure.

The bones, which form the circumference of this cavity, are in number three: the *os ſacrum* on the poſterior ſide; and the two *oſſa inominata* on the lateral and interior parts. Perſons who purpoſe practiſing

tiſing midwifry ſhould be thoroughly acquainted with the poſition, figure, articulation, ſize, and * circumference of theſe bones; becauſe this is neceſſary to form a judgment of the ſpace which theſe bones leave between them below, where the infant paſſes in childbirth. I ſhall therefore briefly deſcribe them, confining myſelf only to what it is abſolutely neceſſary to be acquainted with, to judge of what the bones of the pelvis may give reaſon to apprehend in labour.

The *os ſacrum* forms the poſterior part of the pelvis. Its ſuperior extremity is connected with the laſt of the *vertebræ* of the back (the whole column of which it ſupports) by means of a thin cartilaginous ſubſtance. This bone is very nearly of a triangular ſhape; wider and more thick upwards; thinner and more narrow downwards, where it terminates in a point. Its internal ſurface is pretty even; but has two perpendicular rows of *foramina*, each row conſiſting of four or five. On its ſuperior part this bone is convex towards the pelvis; and it is in this particular place that the child ſometimes finds great difficulty to paſs. It forms, on the contrary, a concavity in its ſmaller and inferior part, where the point bends forward to form, with the *os coccygis*, which is attached to it, the bottom of the baſon, and thereby facilitates the means of ſitting.

Its poſterior ſurface is more uneven. We there obſerve ſeveral protuberances, which ſeem to be the veſtigia of the apophyſes of four or five vertebra, blended and united together to form this bone. We obſerve alſo on this ſurface two other rows of *foramina* anſwerable to thoſe of the internal ſurface, but ſmaller. Beſides theſe two rows of *foramina*, we remark in the *os ſacrum* another canal, which beginning in the middle of the ſuperior part of the bone, traverſes its whole length, and terminates near its point on the poſterior ſurface. The uſe of this canal is to contain the ex-

* Doctor Smellie ſays, the width of the lower part of the pelvis is naturally the ſame in both diameters. *R.*

tremity

tremity of the ſpinal marrow, which terminates at the end of the *os ſacrum*. The anterior and poſterior foramina or canals, which have been taken notice of on both the ſurfaces of the *os ſacrum*, are intended to give paſſage to the nerves which are given off from the ſpinal marrow, and are diſtributed to the neighbouring parts.

The *os ſacrum* is articulated with four other bones, ſuperiorly with the laſt vertebra of the loins, by an articulation which permits of ſome ſmall motion of flexion and extenſion. By its inferior part or point, with the *os coccygis*, through the intervention of a cartilage, and ſome ligaments which allow the *os coccygis* ſome motion in every direction; laſtly, by its two ſuperior lateral ſides with the two *oſſæ inominata*, one on each ſide. This articulation is very ſtrong and cloſe, being formed through the inſertion of protuberances, and ſinuſes, or depreſſions, which are reciprocally met with in the oppoſite ſurfaces of theſe bones, ſtrengthened by the intervention of a thin cartilage, placed between the two ſurfaces. It permits no kind of motion to the *oſſa inominata*, at leaſt in their natural ſtate.

The *os coccygis*, ſo called in Greek from its reſemblance of the bill of a cuckow, is attached, as we have already obſerved, to the lower end of the *os ſacrum*. It is formed by four ſmall bones, nearly of a ſpherical figure, whoſe ſize gradually leſſens in proportion to their diſtance from the *os ſacrum*. Theſe bones are placed in a line like a row of beads, and are connected together in the ſame manner as with the point of the *os ſacrum*, by the intervention of thin cartilages, and by a kind of ligament, which allows them liberty to move backwards or bend forwards on different occaſions. Theſe bones are not placed on a ſtreight line, but bend a little forwards like the point of the *os ſacrum*, for the ſame reaſons, *viz.* to facilitate the poſture of ſitting.

The *ossa inominata* are two large pieces of bone, which form the greatest part of the cavity of the pelvis. In children these bones are each formed of three distinct bones, joined together by thin cartilages, which, becoming ossified by degrees in adults, make only one intire bone on each side. These bones, thus united together in their adult state, have no name; whence they are called the *ossa inominata*. But the three separate bones of which the *ossa inominata* are composed have separate names, as if they were still distinct bones. The two first, called the *ossa ilion*, which form the posterior part of the *ossa inominata*, are articulated on each side with the *os sacrum*, as has been already observed. They are broad and flat, a little concave, and widened towards the pelvis, and superiorly inclining towards a semi-circle, form the upper edges of the hips.

The two second, which are called the *ossa ischion*, compose the middle of the *ossa inominata* on each side. They are remarkable for having each on their external surface a deep cavity, called the *cotyloide* cavity, which serves for the articulation of the thigh bone, and for a roundish eminence on their inferior part, known by the name of the tuberosity of the *os ischion* *.

The two last are called the *ossa pubis*, from their being placed in that part which Latin authors call the pubes. They form the anterior part of the pelvis; and have each in the middle a large oval opening in common with the *ossa ischion*, which is of no use in childbirth. They are connected together forwards, where their superior parts touch each other, and are united together by a cartilage. But their inferior parts separate from each other, and leave a space be-

* From the superior thick part of this bone a sharp process also stands out backwards on each side, which is called the spine of the ischion: the child's head pressing on this protuberance is a frequent cause of difficult labour. *R.*

tween

tween them for the paſſage of the urethra in men, and the vagina in women.

Theſe *oſſa inominata* are widened above, and form a ſpacious cavity : but towards the bottom they approach nearer each other, and leave a much narrower opening, which is ſtill further ſtraightened by the *os coccygis* poſteriorly ; and by the two tuberoſities of the *oſſa iſchion* laterally. It is through this opening that the infant paſſes in child-birth, and conſequently it is of great importance to properly attend to it, to form a judgment of the eaſe or difficulty which will attend the paſſage of the child through it in different ſubjects.

To judge rightly of the ſize of the baſon or pelvis, formed by the bones we have juſt deſcribed, and of the opening theſe bones leave below for the paſſage of the child, it is neceſſary to remark the ſkeleton of a woman, and compare it with the ſkeleton of a man; we ſhall thereby have reaſon to admire the wiſdom of the Divine Creator, who has formed the pelvis in women larger than in men, and given a greater diameter to the opening between theſe bones, in order to render the paſſage of the child into the world more eaſy.

Differences between the male and female ſkeleton.

1ſt. The *os ſacrum* is more convex, and projects farther back in women ; whence it happens that they have larger buttocks.

2dly. The *oſſa ilion* are more hollow inwardly, and more convex outwardly ; whence women have larger hips.

3dly. The *oſſa iſchion* are placed more outwardly, and their inferior tuberoſities are farther aſunder, which affords a freer paſſage.

4thly. The bones of the pubis project more outwardly, and thereby render the cavity of the pelvis larger. They touch each other, and are connected together by a leſs length of ſurface, and by a ſofter

and thicker cartilage; and towards the bottom they ſeparate farther from each other than in men, and thereby render the paſſage wider.

5th. and laſtly. The bones of the *os coccygis* are joined together by ſofter and thicker cartilages; whence they are more moveable, and more readily give way outwardly, which contributes to enlarge the paſſage.

This diſpoſition of the bones of the pelvis is certainly very advantageous, when the bones have their proper natural conformation: but it ſometimes happens, from their bad conformation, that the child is ſtopt in the paſſage in two different places, which may be conſidered as two *ſtraits*. This requires our attention: the place where it moſt frequently happens, and where it is moſt difficult to remedy it, is between the ſuperior internal part of the *os ſacrum*, and the bones of the *pubes*. The *os ſacrum* is naturally convex towards the baſon in this part, as has been already obſerved; and this convexity ſometimes projects very much. If it happens at the ſame time that the bones of the pubes, which ought naturally to be convex outwards, ſhould be flattened; or, which is ſtill worſe, ſhould bend inwards, the diſtance between the ſuperior part of the *os ſacrum*, and the bones of the *pubes*, will be very narrow, and will ſometimes not be wider than two inches and an half, eſpecially in the middle; for the ſpace is rather greater one ach ſide, which occaſions this *ſtrait* to reſemble a figure of eight. In this caſe, the delivery cannot be otherways than very difficult, and ſometimes abſolutely impoſſible. The other *ſtrait* is in the bottom of the *pelvis*, and proceeds from the tuberoſities of the *iſchion* being too large, too long, and eſpecially too much bent inwards; from the too great curvature of the point of the *os ſacrum*, and from the too great length, and inflexibility of the *os coccygis*.

In

In theſe bad conformations of the *pelvis*, it ſometimes happens, when the child is ſtopt in the paſſage, that from its violent efforts the bones of the pubes are ſeparated, and the articulations of the *oſſa ilion* with the *os ſacrum*, give way, which conſiderably augments the ſize of the paſſage, and allows an exit to the infant.

This ſeparation of the bones of the pubes, and the *oſſa inominata*, long ago obſerved by * *Hippocrates*, † *Ætius*, and ‡ *Avicenna*, has been ſtrongly diſputed by ſome modern authors; but it is at preſent ſo firmly eſtabliſhed by indiſputable obſervations as not to admit of the leaſt doubt ||.

To comprehend how this ſeparation happens, it is neceſſary to conſider that the bones of the pubes in women are connected with each other by a much leſs extent of ſurface than in men; that they are leſs cloſely united; and that their cartilage is much thicker: and, laſtly, that it is naturally much ſofter, and more capable of extenſion; ſo that when the infant meets with difficulty in the paſſage, and diſturbs the circulation of the blood and *lymph* in every part of the pelvis, the ſerous fluid, which is ſeparated in conſequence thereof, ſoftens by degrees the cartilage, which unites together the bones of the *pubes*, till it is ſuffi-

* In his book, De Natura Pueri, towards the end.

† Tetrabiblio, ſermone iv. cap. 22.

‡ Lib. III. tract. i. cap. 3.

|| Ambroſe Parey, book xxviii. chap. 13.
Riolan Authropograph, book v. chap. 13.
Caſpar Bauhine Theatrum. Anatomicum, book i. chap. 49.
Hildanus's Chirurgical Obſervations, century vi. obſervat. 9.
Harvey's Generation of Animals, book ii. exerc. 57.
Diemerbroeck's Anatomy, book 9. chap. 26.
Spigelius on the Structure of the Human Body, book ii. c. 24.
Among the number of thoſe who deny this ſeparation is Profeſſor Monro of Edinburgh, who aſſerts, that he could never be ſenſible of ſuch a ſeparation or removal of the bones, though he frequently attempted to ſatisfy himſelf in this matter in ſeveral laborious births. Morgagni alſo thinks this happens only in a few extraordinary caſes. *R.*

ciently mollified to yield to the impulſe of the infant. When things are come to this paſs, the articulations of the *oſſa ilion* with the *os ſacrum*, make but little reſiſtance; whether from the cartilages which connect them together being ſoftened from the ſame cauſe, or from the infant's having, by ſeparating the bones of the pubes, the advantage of a lever over theſe articulations, by reaſon of the length of the *oſſa inominata*. Thus, in proportion, as the bones of the *pubes* are ſeparated, the articulations of the *oſſa inominata* give way, and continue to do ſo more and more, according as the ſeparation of the *oſſa pubes* increaſes; and thereby the infant procures a paſſage, for which purpoſe a very ſmall ſeparation of the *oſſa pubes* is ſufficient.

When the child is come into the world, and a free circulation of the blood and lymph is re-eſtabliſhed in every part of the *pelvis*, the cartilages of the three articulations grow harder, contract, and bring the bones of the pubes nearer each other again, and the *oſſa inominata* cloſe to the *os ſacrum*. Thus theſe bones recover their natural ſituation, and leave no other mark of their ſeparation than a ſlight ſenſe of pain, which is felt about the *os ſacrum*, and goes off by degrees.

CHAP.

CHAP. II.

Of the womb and its different ſituations.

AN anatomical knowledge of the ſtructure of the womb; the kind of veſſels which bedew its ſurface; of the diſtribution and uſe of theſe veſſels, is not at all neceſſary for midwives: and a particular knowledge of the other parts through which the infant paſſes, that is to ſay the *vagina*, &c. ſtill leſs; therefore I ſhall confine myſelf to explain briefly here what they ought to be acquainted with to fulfil the duties of their ſtation. The womb may be divided into three parts; its bottom, neck, and orifice: and it is neceſſary that midwives ſhould have a general knowledge of each of theſe parts. 1ſt. The bottom of the womb comprehends all its ſuperior part, and conſequently makes two thirds at leaſt of its ſize. It is in this part the infant is contained; and as it muſt of conſequence be ſufficiently dilated by the growth of the child, can have no occaſion to receive any farther dilatation in child-birth. One would be ready to imagine that this part of the womb grew thinner during pregnancy from its dilatation; but it is intirely otherways, it becomes thicker, through the enlargement of the ſanguineous veſſels, which are diſtributed thereto.

Its ſides are at this time generally more than half an inch thick, ſometimes three quarters of an inch, and even an inch in thickneſs, which is of great uſe to prevent in the violent motions of the child, which in difficult labours puſhes ſtrongly outwards the bottom of the womb, from tearing, as ſometimes happens on theſe occaſions. 2dly. The lower part of the womb, called its neck, is too narrow, even towards the end of pregnancy, to give room for the infant to paſs through: but it is dilated by the ſtay the child makes there, after it is turned for birth; and

it

it undergoes this dilatation the more eaſily from the bulk of the child, which, compreſſing its ſides, hinders the circulation of the blood and *lymph*, which cauſes an extravaſation of a ſerous *lymph*, which ſoftens the part, and renders it more extenſible. 3dly. The narroweſt part of all, is the orifice of the womb, where the great labour of delivery is. This orifice is cloſely ſhut during pregnancy; and it is during delivery only that it is opened ſufficiently, to afford a paſſage for the child. This dilatation is principally owing to the action of the child, which forces a paſſage, to which the inſtantaneous contraction of the radical fibres which ſurround this orifice, contribute, facilitated by the ſoftening of the ſame fibres, which the ſtay of the child, in this part, has occaſioned, for the reaſons already given.

The difficulty of overcoming the reſiſtance of the orifice of the womb varies in different ſubjects. In ſome perſons, this orifice is very narrow, eſpecially in the firſt lying-in; and the edges are at the ſame time very thick, compact, and almoſt horny. This happens generally to women paſt their thirtieth year, and occaſions a difficult labour: there are even ſome, in whom theſe edges are hard, callous, and almoſt ſchirrous, through the whole circumference, or at leaſt in ſome part, in conſequence of ſome diſorder, or a preceding difficult labour; and, in this caſe, the delivery cannot be otherwiſe than laborious. There are others, on the contrary, in whom theſe edges are flat, thin, weak, readily give way to the impulſe of the child, and dilate without pain, which renders delivery ſo quick, that if the midwife is not very attentive, the child may be born without her aſſiſtance. But it is with great difficulty that theſe women go their full time; and they are very ſubject to miſcarry. Laſtly, there are ſome, in whom theſe edges are ſupple, ſoft, thick; of a pulpy ſubſtance; eaſy to dilate, without dilating too quickly, which happens the moſt frequently, and is the moſt advantageous

geous for delivery. When the infant cannot, without difficulty, force a paſſage, eſpecially if it preſents itſelf obliquely to the orifice, it ſometimes ruptures the ſides, and cauſes lacerations, which are ſometimes attended with bad conſequences. The midwife ſhould take care to prevent this accident, by not haſtening the delivery too much; by ſmeering the paſſage well with freſh butter, oil, or hog's-lard; by gently aſſiſting the dilatation of the orifice, by directing the head of the child, and eſpecially by taking care not to do miſchief through her imprudence, or too great hurry.

When the head of the child has got beyond the orifice of the womb, and the ſhoulders are fixed there, it is a common expreſſion to ſay, the child is in the paſſage, becauſe it is in the *vagina*; and the delivery, reaſonably enough, is looked upon to be as good as over: for the *vagina*, whoſe ſides are eaſily dilated, readily gives way, and allows the child to come forward. Its orifice, where the *carunculæ myrtiformes* are ſituated, is a little narrower, and affords rather more reſiſtance, but for a very little while only.

At length, the child paſſes into the external orifice of the *pudenda*, whence it makes its exit immediately. The folds which are in this part, known by the name of the *nymphæ*, extend themſelves, and augment its capacity, and thereby give a free paſſage to the infant. It nevertheleſs ſometimes happens, that the head of the child preſenting obliquely, and bearing too much on the bottom of the *pudenda*, towards the *os coccygis*, lacerates the part which ſeparates the *pudenda* from the fundament, and thereby occaſions a troubleſome and diſagreeable inconveniency.

It is abſolutely neceſſary to be acquainted with the ſituation of the womb in the *pelvis* in pregnant women, becauſe this ſhould ſerve for a rule in delivery; therefore midwives cannot be too attentive to get a proper knowledge thereof.

The moſt natural and moſt advantageous ſituation of the womb, is to be placed ſtreight; in ſuch a manner, that its bottom and its orifice may be in the ſame direction with the *vagina*. It is eaſily perceived, that in this ſituation it performs its proper functions moſt readily; that on the one hand, the ſeminal fluid can more eaſily penetrate it; and that, on the other hand, the infant can make its paſſage with leſs difficulty, without reckoning this advantage, that nothing can ſtagnate in its cavity, which prevents many inconveniencies.

Some women are happy enough to have the womb thus ſituated; but they are not many; nor is there the leaſt reaſon to wonder at it. The womb bearing on its extremity, that is to ſay, its narroweſt part on the extremity of the *vagina*, has nothing to ſupport it on the ſides; for I make no account of thoſe pretended round ligaments, which readily give way on every occaſion; and which, in pregnancy, when their action would be moſt neceſſary, are entirely uſeleſs, becauſe they are then inſerted about the neck of the womb, and cannot ſerve to keep the bottom of it ſtreight, which is raiſed very much, by the dilatation it undergoes through the growth of the child. The leaſt thing is ſufficient to make it incline to either ſide: and ſo far from being aſtoniſhed that the womb is ſo often oblique, there is much greater reaſon to wonder that it is not always ſo.

In girls and women who have not had children, different cauſes may contribute to this obliquity: if the womb is a little bigger, or a little more turgid on one ſide; if the canal of the *vagina* is a little ſhorter, or a little more lax on one ſide than the other; if independently of theſe defects of the conformation, women have had a cuſtom of lying always on the ſame ſide; if they have accuſtomed themſelves to hold their water, in which caſe the bladder being over diſtended, will puſh the womb backward; or if they are naturally coſtive, in conſequence

quence whereof, the gut *rectum*, being over-diſtended; or, which is ſtill leſs, if ſome of the contents of the *abdomen*, or lower belly, preſs unequally on the womb, either of theſe circumſtances are ſufficient to diſplace it.

Though the obliquity of the womb is not uncommon in girls and women who have never had children, it is nevertheleſs more common in pregnant women, for two reaſons: firſt, becauſe the womb, which reſts on its point, as has been already obſerved, is then larger, and ſo much weightier, that it is impoſſible for it to remain in *equilibrium*, without inclining to one ſide or other, being fixed on ſo narrow a baſis. Secondly, the infant which it contains, muſt, in a great many caſes, make it incline to one ſide or the other. We ſhall ſee, in the following chapter, that the after-birth is attached toward the bottom of the womb; but it is not always attached exactly to the middle: if its attachment in the leaſt deviates from the middle, this circumſtance alone makes the womb incline toward that ſide.

When a woman has had the womb obliquely ſituared in her firſt pregnancy, it generally happens ſo in all the reſt, and almoſt always toward the ſame ſide; becauſe the *fibres* of the womb on the ſide to which it inclined, during the firſt pregnancy, are ſhortened, while thoſe of the oppoſite ſide are elongated, which remains during her ſubſequent pregnancy, and determines the ſituation of the womb. It is from hence women are apt to ſay, that they have carried their children on the right, or left ſide; which in fact ſignifies, that they have had an obliquity of the womb backward, toward the right or left ſide, in all their pregnancies.

Midwives cannot be too ſtrongly recommended to take notice of the obliquity of the womb, at leaſt in the time of delivery, if they have not had the precaution to inform themſelves of it before. Frequently, delivery is tedious and laborious, from a want of this

this neceſſary attention only. When the womb is oblique backwards, the head of the infant ſtrikes againſt the anterior rim of the orifice of the womb; and all its efforts are directed againſt the bones of the *pubes*. If the ſituation of the womb is oblique forwards, they are exerted againſt the *os ſacrum*, and againſt the poſterior edge of the orifice of the womb: if its obliquity is towards either ſide, the head of the infant preſſes againſt the edge of the orifice of the oppoſite ſide, and all its efforts are waſted againſt the *os iſchion*.

Thus, in all theſe caſes, the labour is tedious and laborious: the infant exhauſts its ſtrength, as well as the mother, in fruitleſs efforts: the delivery does not advance, and frequently ends with ſome accident, unleſs the midwife does bethink herſelf, and endeavour to rectify the poſition of the child, and place it in the right way; which might more eaſily and more advantageouſly have been done at firſt.

CHAP. III.

Of the ſecundines, or after-birth.—Of the ſituation of the after-birth in the womb; and of the infant in its membranes.

THE infant is incloſed in the womb in a membranous bag, formed by two diſtinct membranes, though cloſely connected to each other. This bag contains, beſide the infant, a pretty large quantity of a ſerous fluid, called the *waters*. Laſtly, one part of the external ſurface of this bag is covered with a ſoft, ſpongy, red ſubſtance. Theſe different parts, which form this bag, are called the after-birth; and it is of conſequence to diſtinguiſh nicely the different parts thereof.

The external membrane of this bag, called the *chorion*, is denſe, ſtrong, thick, and very ſmooth on the ſide where it touches the internal membrane; but covered on its external ſurface with ſmall inequalities, or little knots, of a red pulpy ſubſtance, whoſe uſe will be explained in the following articles.

The internal membrane, called the *amnios*, is very thin, fine, and ſmooth, on both ſides; though in contact with the internal ſurface of the *chorion*, it does not adhere thereto, being ſeparated by a ſmall quantity of mucilaginous lymph.

About a third part of the firſt of theſe membranes, or the *chorion*, is covered with a ſoft, pulpy, ſpongy, round ſubſtance, generally about ſeventeen or eighteen inches diameter; about the thickneſs of an inch, or an inch and an half in its middle; growing thinner towards its edge, where it is ſcarcely half an inch thick. This ſubſtance reſembles a cake, whence it is called in Latin, the *placenta*; by which name it is generally known. The uſe of this ſubſtance is principally to receive the nouriſhment of the infant, and convey it to it. The ſmall knots, which are obſerved

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on the external ſurface of the *chorion*, are ſo many little *placenta*'s, deſigned for the ſame uſe; and their reſemblance to the *placenta* ſeems to favour this opinion.

The infant ſwims in the middle of a ſerous fluid contained in the *amnios*, and is fixed to the after-birth by a cord about half an inch thick. This cord takes its origin from the navel of the child, and terminates about the middle of the *placenta*. It contains two arteries and a vein. The arteries come from the right and left internal *iliac* arteries, and carry the blood of the infant to the *placenta*, and other *ſecundines*. The vein carries back the blood, which returns from the ſame parts, and therewith beſides, thoſe juices which the mother furniſhes for the nutrition of the child. When this vein arrives at the navel, it aſcends towards the liver, enters the trunk of the *vena portarum*, and the blood contained therein paſſes through the greateſt part of the venal canal, till it at length enters the *vena cava aſcendens*. Theſe three veſſels form in the middle of the *placenta* a great number of large ramifications; which, after ſeveral ſubdiviſions, produce thoſe numerous capillary veſſels, which are ſpread over the ſurface of the *placenta*, and its membranes, eſpecially the *chorion*.

The ſituation of the after-birth in the womb, and of the infant in its membranes, is too certain to be the effect of chance, which perpetually varies. It depends upon a particular mechaniſm, which it is neceſſary to examine; becauſe theſe ſituations influence very much, (as will be hereafter ſeen) the manner in which the child preſents in labour.

The after-birth has a regular ſituation, which is fixed by the attachment of the *placenta* near the bottom of the womb. The diſſection of women who have died during their pregnancy, eſtabliſhes this fact: and beſide, there is ſcarcely a midwife who does not know, from experience, that when ſhe is obliged to bring

bring away the after-birth, that almoſt always it adheres near the bottom of the womb.

This regularity in the attachment of the *placenta* depends on a very certain phyſical cauſe. The impregnated egg deſcends from the *ovaria* in conception; ſwims for ſome time without any attachment, in the lymphatic fluid, which is collected in the womb. During this interval, the *placenta*, which is the lighteſt and moſt ſpongy part of the egg, muſt float on the uppermoſt ſurface, which will anſwer to the bottom of the womb, and conſtantly keep this ſituation till it adheres thereto, which determines its ſituation, and that of the ſecundines, during the remainder of pregnancy.

To keep ſtrictly to this way of reaſoning, the *placenta* ſhould be always affixed to the middle of the bottom of the womb, directly oppoſite to its orifice: and this would be the caſe, if the egg was always of equal weight in all its lateral parts round the *placenta*, and the poſition of the womb was always perfectly ſtraight. But one or other of theſe circumſtances are frequently wanting: ſometimes the egg is a little heavier on one ſide than the other, which makes the *placenta* incline more towards that ſide, and then it cannot adhere exactly to the bottom of the womb. At other times, the womb itſelf is not ſtraight, and inclines either forwards or backwards, to the right or to the left; and then the *placenta* occupying exactly the higheſt part of the egg, it cannot adhere to the bottom of the womb; ſo that in eſtabliſhing a general rule, it is eaſy to foreſee, it will be liable to many exceptions.

The infant, ſurrounded with its membranes, in which it floats in the liquor of the *amnios*, is always ſituated with its head uppermoſt, and is conſtantly found in this poſition, in diſſections of pregnant women. This ſituation of the infant in its membranes happens from the ſame cauſe which has juſt now been taken notice of, to explain the ſituation of the *placenta*.

centa. The uppermoſt part of the infant in the womb, during the earlieſt part of pregnancy, is the lighteſt of its whole body; whether on account of the cavities of the breaſt, noſtrils, mouth, and ears, or from the largeneſs of the head and ſmallneſs of the brain, which encreaſes but very ſlowly during pregnancy. Either of theſe cauſes are ſufficient to make the reſt of the body, as the moſt weighty, fall downwards, and the head occupy the uppermoſt ſituation.

This rule, though very general, is liable to ſome exceptions: thus, if the infant has a very large head, and heavier than ordinary; or has a dropſy of the head: in this caſe, either the head will fall downward, if it is much heavier than the reſt of the body, or will float irregularly, without any certain poſition, if it is nearly as heavy in proportion as the reſt of the body. But we ſee theſe exceptions ſerve to ſtrengthen the propoſition, by confirming the natural poſition of the head of the infant, and the reaſon given for it by this rule.

The infant not only has its head uppermoſt during pregnancy, but has its face turned forwards; and the back reſting againſt the back of the mother. Repeated diſſections of pregnant women confirm this obſervation; and from thence we may infer the new poſture of the infant towards the end of the ninth month, after it is turned for birth; which will be taken notice of in the next chapter. It then not only has its head downwards, oppoſite the orifice of the womb, but its face turned backward, towards the *os ſacrum* of the mother; which proves, that its head was before, during pregnancy, placed uppermoſt, and its face turned forwards, as has been already obſerved.

It is obvious, that the infant takes this ſituation mechanically for its convenience, while it is ſmall, and does not intirely fill up the cavity of the membranes; it can turn itſelf as it will; and all ſituations

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are alike to it in this reſpect: but when it is much bigger, its convenience obliges it to take the poſture which has been aſſigned it; by this means, the convexity of its back anſwers to the concavity of the *os ſacrum* and loins of its mother; and its head, knees, and elbows, are commodiouſly placed againſt the integuments of the mother's belly, which afford but a ſlight reſiſtance; which would not be the caſe in the contrary poſition, if they were turned towards the *os ſacrum*, bones of the *ilion*, and vertebræ of the loins, againſt which they would be preſſed and bruiſed.

Laſtly, it is not for convenience only, but meer neceſſity, to accommodate itſelf to the ſpace which it muſt occupy, that the infant is bent together in its membranes, towards the end of pregnancy. Its heels touch its buttocks; its head is placed between its two knees; its hands generally reſt on its face, with its arms folded, and reſting on its thighs: In ſhort, it is wrapt up like a ball, and by this means takes up the leaſt room it is poſſible for it to do; and it is in this ſituation alone, that the womb and its membranes could contain it. Happily, its articulations are ſo lax and flexible, that it undergoes no inconvenience from this folding up of its limbs.

It does not ſeem that the infant, in this ſituation, can uſe any great motion: it can only ſtretch out a little its heels; ſeparate a little its knees, or buttocks; or bend or ſtreighten its neck a little, till at laſt it is forced, by a wonderful mechaniſm, which will be explained in the fifth chapter, to alter its poſture, which allows it to be more at its eaſe; and which is, as it were, the firſt ſtep towards labour.

CHAP. IV.

Of the examination of the parts before labour; which is called the touch.

MIDWIVES are ſeldom ſent for before labour comes on; and then there is more occaſion for acting than examining. But when they have acceſs to women whom they are to deliver, it is prudent to examine, towards the end of pregnancy, the ſtate of the parts, to enable them to form a judgment of the difficulty or eaſe they are likely to meet with when the labour comes on. This examination turns on four heads: on the ſtate of the *vagina*; the ſtate of the bones which form the baſon, or *pelvis*; the orifice of the womb; and the ſituation of the womb itſelf. Though they are not all of the ſame importance, they deſerve, nevertheleſs, to be treated of ſeparately.

The *vagina* is ſoon examined; and it is very ſeldom that any thing remarkable is met with there, eſpecially in a pregnant woman, who has already made uſe of theſe parts. Nevertheleſs, we learn from obſervations, that ſometimes ſteatomatous tumours are formed there, which ſtraiten its diameter; that its ſides ſometimes adhere together, in conſequence of neglected excoriations or ulcers, and membranes, which cloſe up its cavity, excepting a ſmall opening. It is ſurpriſing, that in ſpight of theſe obſtacles, women have nevertheleſs become pregnant; which ſhews, that there is a periſtaltic motion in the *vagina* on theſe occaſions, which conveys into the womb the ſmall quantity of ſeminal fluid which has ſurmounted theſe obſtacles, in the ſame manner as the periſtaltic motion of the *oeſophagus* carries the aliments from the mouth into the ſtomach.

Amongſt theſe obſtacles, there are ſome that ſhould be remedied as ſoon as they are diſcovered. Of this

kind is the membranous partition which closes the cavity of the *vagina*, and which is of the same kind with those that are met with in the neck of the *vagina*. In girls that are inperforated, sometimes they can be torn asunder with the nails; and this is the best way, when it will succeed: however, if this fails, it is proper to make a simple, or crucial incision, with a concealed bistory; which, rising from its sheath but a little, is incapable of wounding the sides of the *vagina*, and may be introduced into the opening destined for the passage of the monthly courses, when this partition is in the least perforated.

If there should be any considerable steatomatous tumour in the *vagina*, which fills up its cavity, and forms an obstacle to the passage of the child, it must be extirpated by the ligature, or amputation. But in this case, pregnant women, who are acquainted with their condition, take care to give the midwife notice of it, and endeavour to remedy it before labour. If there are only some tubercles, or inconsiderable tumours in the passage of the *vagina*, they may be neglected; because the coats of the *vagina* are sufficiently extensible to give way to the pressure of the child in its passage into the world, in spite of this trifling obstacle.

With respect to adherences of the sides of the *vagina*, if they are of small extent, soft, or formed of tendinous filaments only, it will be right to separate them with a blunt-pointed bistory, which may be conducted with dexterity, by the assistance of one or two fingers of the left hand to direct it. But if this adhesion is very extensive, and very hard, it will be proper to wait for some one of those miracles which nature effects sometimes; an example of which is to be met with in the Memoirs of the Academy of Sciences for the year 1712, p. 27. If nature effects nothing, we can, at the approach of labour, decide, whether it is more proper to perform the *Cesarean* operation, to extract the child, or make an incision

lengthways in the *vagina* (to procure a paſſage for the child) which we muſt endeavour to manage as well as poſſible.

In all theſe different caſes, if there remains in the *vagina* any contraction or narrowneſs, we muſt uſe our utmoſt endeavours to ſoften and render it extenſible, by keeping conſtantly, for a month before delivery, a roll of linen in the *vagina*, of the ſhape of a peſſary, filled with the pulp of emollient herbs, or a long piece of ſponge ſoaked in an emollient decoction.

The defects of the *vagina*, which have juſt been treated of, are rare, at leaſt in ſuch a degree as to hinder delivery; but it is nevertheleſs neceſſary to be acquainted with them.

The defects of the conformation of the bones of the *pelvis* deſerve much more notice than the defects of the *vagina*, becauſe they are more common, and without remedy. Theſe defects, as has been obſerved in the firſt chapter, are reduced to two ſtraits, the one in the upper part of the *pelvis*, the other in the lower part, where the child ſometimes meets with great difficulty, and ſometimes cannot paſs at all.

The uppermoſt ſtrait is formed between the ſuperior part of the *os ſacrum* and the ſymphyſis of the bones of the *pubes*. When the laſt *vertebra* of the loins and the top of the *os ſacrum* bend too much inward, and at the ſame time the bones of the *pubes*, inſtead of being convex outwardly, as they naturally ſhould be, are flattened, or, which is worſe, are convex inwardly, this ſtrait is narroweſt in the middle, and a little wider at the two ends, conſequently is of the ſhape of a figure of eight. The child always here finds difficulty; but it is ſo narrow ſometimes, that it is impoſſible for the child to paſs through it, and then there remains no other reſource to ſave both mother and child, than to perform the *Ceſarean* operation.

The lower ſtrait is met with between the tuberoſities of the two *oſſa iſchion* and the point of the *os ſacrum*

ſacrum and *os coccygis*, which is connected thereto. When theſe tuberoſities are larger, longer, and more bent inwards than common; when the point of the *os ſacrum* is longer, or more bent inwards; when the bones of the *os coccygis*, too cloſely united, render this bone leſs flexible outward, and backwards; though this laſt ſtrait renders ſometimes delivery difficult, the accidents to which it gives riſe are not to be compared to thoſe occaſioned by the ſuperior ſtrait.

It is eaſy to find out the defects of the formation of the bones of the *pelvis*, which form the ſuperior ſtrait, by introducing a finger or two, moiſtened with pomatum, into the *vagina*, and by directing them into the orifice of the womb, the projection which the upper part of the *os ſacrum* makes inwardly, will be felt in the back part, and forwards the like projection, formed by the bones of the *pubes*. A judgment may even be formed of the diſtance between theſe bones, and conſequently of the difficulty the child will there meet with. This bad conformation may even be known by external inſpection of the perſon only, becauſe theſe perſons have a hollowneſs above the buttocks, which ſhews that the upper part of the *os ſacrum* is bent inwards; and that the bones of the *pubes*, inſtead of being raiſed, are flattened, and even ſunk inwards.

It is ſtill eaſier to find the ſtate of the lower ſtrait, becauſe one can eaſily form a judgment from the ſize, length, and curvature of the tuberoſities of the *iſchion*, as well as the length and curvature of the *os ſacrum*, and length and inflexibility of the *os coccygis*. The obſtacles which theſe ſtraits may oppoſe to the paſſage of the infant are inſurmountable, unleſs the head of the child, from its efforts, becomes lengthened, and thereby ſufficiently ſmall to make its way through this paſſage, which ſometimes happens; or the bones of the *pubes* ſeparate, which alſo ſometimes happens in young women.

The child paſſes through the mouth of the womb, which is the reaſon why its greater or leſs facility of

dilatation and extenſion, renders labour more or leſs favourable, more or leſs tedious, more or leſs laborious; which ſhould induce midwives carefully to examine the ſtate thereof.

1ſt, If the edges of the orifice of the womb are ſmooth, thick, flexible, and pulpy, there is reaſon to expect that it will dilate eaſily, which promiſes an happy delivery, provided the child preſents favourably; beſides, this diſpoſition of the orifice ſhews a like diſpoſition in the womb, that it will be very fibrous and muſcular, and conſequently capable of contracting with force during labour.

2dly, When the edges of the mouth of the womb are flat and thin, there can be no doubt of their dilating readily, which will render delivery ſo much the eaſier: but this diſpoſition of the orifice gives reaſon to apprehend the like diſpoſition in the ſubſtance of the womb, which being thereby leſs fleſhy, and of a thinner ſubſtance, can only contract weakly during labour. Beſides, if the infant is ſituated croſs-ways in the womb, and is vigorous, there is reaſon to apprehend a rupture of the womb, whoſe fibres are not in a ſtate to reſiſt its efforts.

Both theſe ſtates of the mouth of the womb are natural, and depend on the firſt conformation. It would be proper at the ſame time to take notice whether the mouth of the womb is wide or narrow: but it is difficult to judge of this circumſtance during pregnancy; all we know for certain is, that it is always narrower in the firſt than in the ſubſequent labours.

3dly, The mouth of the womb is liable to different and preternatural defects, the conſequence of preceding or preſent diſorders. Its edges are ſometimes hard and callous, this calloſity is ſometimes ſchirrous, ſometimes this ſchirrus is accompanied with painful ſhootings, and is conſequently become already carcinomatous, or almoſt ſo; ſometimes this cancer is ulcerated, ſometimes there are only ulcerous excoriations,

riations, or ſimple ulcers, without any cancer. Laſtly, theſe diſorders ſometimes extend round the whole orifice, and ſometimes affect a part only thereof.

All theſe diſorders of the orifice of the womb render delivery more difficult, tedious, and painful; and more or leſs ſo, according as theſe diſorders are more or leſs troubleſome, or occupy a greater or leſs extent of ſurface. Frequently the body of the womb is affected with theſe diſorders as well as the orifice. When the midwife is come to the knowledge of theſe diſorders, ſhe ſhould prepare to make uſe of her utmoſt dexterity to aſſiſt delivery, and arm herſelf with patience, becauſe in ſuch a ſtate of the orifice, labour cannot advance but very ſlowly.

Though theſe diſorders of the orifice of the womb were known early, very little could be done, except to apply relaxing and lenient applications, after the manner which has been pointed out in the firſt article of this chapter.

The natural ſituation of the womb is to be exactly in the ſame direction with the *vagina*, without inclining to either ſide. This poſition is advantageous for the exit of the child, which then paſſes of itſelf, without aſſiſtance, directly from the mouth of the womb into the *vagina*. One is certain of this poſition of the womb, when its orifice is found to correſpond with the middle of the *vagina*, and to be of an equal diſtance from every part of its circumference.

But unfortunately this ſituation, though natural, is not the moſt common. The womb inclines frequently to the right or left, but oftener forward or backward; when this is the caſe, the infant, in making its exit from the womb, cannot paſs through the *vagina*, but hits againſt ſome parts of its ſides, where it ſticks, unleſs the midwife has ſkill ſufficient to rectify its poſition, and place it in the right road.

It is eaſy to find out theſe oblique ſituations of the womb, by examining where the orifice is to be met with; for the womb always inclines towards the oppoſite

poſite ſide to that to which the orifice is turned. Thus if the orifice is found on examination ſituated on the right ſide of the *vagina*, the obliquity of the womb is towards the left ſide, and the ſame in every other poſition.

The cauſes of the oblique ſituation of the womb have been remarked in the preceding chapter, and the means of remedying it are to be met with in the firſt chapter of the fourth book of this work.

The greateſt part of unmarried young women, though pregnant, obſtinately deny their being ſo, even when the ſwelling of their belly ſhews it plainly, and, to evade this proof, pretend they are dropſical. The ſigns by which pregnancy may be diſtinguiſhed from the dropſy, and even the dropſy of the womb, may be ſeen in the ſeventh chapter of the ſecond book of my treatiſe *on the Diſorders of Women*. The touch may ſerve for a diagnoſtic in this caſe, at leaſt after the third month. Nothing more is required for this operation than to introduce two fingers, moiſtened with pomatum, into the *vagina*, as far as the mouth of the womb, at the ſame time preſſing the palm of the other hand againſt the bottom of the womb, which about the third month of pregnancy riſes above the bones of the *pubes*.

Then by preſſing the womb alternately upwards and downwards, it will be eaſily perceived that it contains a round hard body. But however ſagacious the perſon may be who makes this examination, he cannot determine whether it is a child, or a polypous excreſcence of the womb. To form a deciſive judgment, the child ſhould be felt to ſtir; and this proof may be obtained after the fourteenth week of pregnancy, by preſſing the womb a little, or ſlightly agitating it. I have met with young women, who the moment they have felt the motion of the child in this trial have coughed forcibly, to hinder, by the contraction of the muſcles of the belly, my feeling the motion of the child; but beſides that this trick itſelf condemns

them, desire them to abstain from coughing, and the child which has been agitated, continuing to stir, will afford a sufficient proof of what is required.

The manner of touching is very easy: the midwife should have her nails cut short, and as even as possible; she should moisten well with pomatum or butter, those fingers she intends to make use of, and should chuse that hand which is most convenient, according to which side is next the person she intends to examine. The woman should be placed in bed, on her back, her breech a little elevated, and her knees bent, and may then be covered with her petticoats, or if in bed, with the bed-cloaths; the two fore-fingers are then to be introduced gently into the *vagina*, and by introducing them, the state of the parts may be examined. The person may also be examined standing; and sometimes this posture is the most convenient, because the womb pressing downwards in this position, presents itself better to the touch. If the person is costive, a clyster is recommended to be administered before examination; but this does not appear absolutely necessary.

CHAP. V.

Of the change which happens in the ſituation of the child, and the ſtate of the womb at the approach of labour.

IT has juſt been obſerved in the preceding chapter, that the reſpective likeneſs of the parts above the navel, compared with thoſe below, oblige the infant to keep in its membranes, the head uppermoſt, and the feet downwards. This poſition continues during the whole pregnancy, and is equally commodious both for the child, which is intirely at eaſe in this poſture, and for the mother, who bears her burthen with leſs trouble when ſhe carries it rather high.

But this ſituation, ſo uſeful during geſtation, is not advantageous for delivery; and therefore it was neceſſary that the child, at the approach of this period, ſhould change its ſituation, and in fact it does then change it through an admirable mechaniſm. The inferior and ſuperior parts of the body of the infant, as well with reſpect to fleſh as bone, increaſe in ſize during pregnancy in an equal and uniform manner, which does not make any difference in their reſpective weight; yet it cauſes in the ſuperior parts other changes, which deſtroy the *equilibrium*. The liver, which was very ſmall in the embryo, becomes, during pregnancy, of a conſiderable ſize and weight. The lungs, which ſcarcely can be perceived in the embryo, and are a kind of glairy ſubſtance, increaſe in magnitude, become compact, and, in ſhort, capable of ſuſtaining the impreſſion of the air, which they are ſoon to reſpire. The cavities of the ears and noſtrils, which are very large in the embryo, are conſiderably ſtraitened by the increaſe of their bones, and ſhew leſs vacancy. The orbits of the eyes are filled up by the growth of the eyes, which are contained in their cavity. The teeth are grown larger in their ſockets, and occaſion

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a new increaſe of weight. Laſtly, the brain and the *cerebellum*, which in the embryo were a thin, glairy, ſpongy ſubſtance, have acquired a ſize and conſiſtence ſufficient to perform their deſtined functions, and conſequently weigh much heavier.

All theſe cauſes, which are found united towards the end of pregnancy, make the ſuperior parts of the child weigh more than the inferior; whence they muſt, by the invariable laws of hydroſtatics, fall downwards, the inferior parts of the child riſe uppermoſt, and entirely change its poſition. This is what is called the turning of the child for birth, which denotes the approach of labour, and precedes it a greater or leſs number of days, according as the progreſs of the child's growth has been more or leſs quick.

If we attend to the poſition in which the child was before placed, its body bent inwards, and the head inclining the ſame way, we ſhall readily comprehend, that in making this turn the head muſt fall firſt forwards on the neck of the womb, near its orifice; that the trunk of the body muſt follow, and the inferior extremities mount uppermoſt towards the bottom of the womb; as alſo that the face of the child, which was before placed forward towards its mother's belly, will, in its new poſition, be found turned backwards towards the *os ſacrum*, that is to ſay, in a direct contrary ſituation to that which it was in before, but abſolutely neceſſary for delivery.

This diſplacing of the child changes the form of the belly: the infant, which has fell down upon the neck of the womb, no longer occupies its bottom with its head or its trunk, which are now of ſome ſize, but with its feet, which, in compariſon, are very ſmall. The womb is no longer ſo much diſtended; the belly ſinks, and the whole weight of the child bears on its mother's hips. In the mean while, the child, ſufficiently confined in its new poſture, takes the advantage of its liberty to ſtretch out its limbs, and, by the motion of its feet, ſtrikes againſt the internal

tetnal ſurface of the womb, and cauſes ſlight pains, which are the harbingers of approaching delivery; which happens ſooner or later, according to their different degree of ſtrength and intervals of return.

It is by this means that delivery advances by degrees. The head of the infant preſſing on the neck of the womb extends it, and compreſſing the blood-veſſels and lymphatics, which are diſtributed through its ſurface, occaſions an oozing of a ſerous fluid, which moiſtens it, renders it oedematous, and diſpoſes it to give way eaſily. This oedematous ſwelling, which precedes delivery, is ſometimes ſo conſiderable that it extends even to the external *pudenda*.

In proportion as the neck of the womb gives way and is extended, the child deſcends lower and lower, puſhed forward by the efforts it makes, by bearing itſelf on its feet, which it reſts againſt the bottom of the womb; and by the contractions of the womb, which it excites by its kicking, it at length arrives at the internal edge of the orifice of the womb, which ſhould be looked upon as deſigned by the Author of Nature to put in motion, and irritate all the parts which concur to produce labour.

Theſe kind of motions, excited by the impreſſion, irritation, or a pleaſing ſenſation of a particular part, known by the name of ſympathetic motions, are common: thus a little ſnuff conveyed into the noſtrils excites ſneezing; and the impreſſion which is made in the ſtomach on particular parts thereof, cauſes vomiting or the hiccups, the action of ſmoke or acrimony of the *mucus* of the windpipe produces coughing; in the ſame manner the impreſſion, dragging pain, and irritation, which the head of the child cauſes in the mouth of the womb, puts all the parts into a ſtate of contraction, and thereby procures delivery.

At this time the radical fibres which ſurround the orifice of the womb contract and dilate this paſſage. At this time the muſcular fibres of the womb, and eſpecially the circular fibres of its bottom, contract,

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puſh the child forward towards the orifice, and allow it a free paſſage. At this time, in difficult labours, the *diaphragm*, and muſcles of the *abdomen* or belly lend their aſſiſtance, and by contracting all at once, accelerate delivery. Laſtly, at this time the union of all theſe cauſes effects a ſpeedy and happy delivery, when there is no obſtacle to prevent it.

The greateſt difficulty the child meets with is at the orifice of the womb; but this paſſage being ſo much ſoftened and relaxed, at length gives way. Nothing more is required than to hinder the too violent or too haſty efforts of the child and the womb, from cauſing lacerations in its edges, which might be troubleſome; and the midwife muſt be careful to prevent this accident, by not hurrying delivery too faſt, by moiſtening the paſſage well with pomatum or freſh butter, by gently aſſiſting to dilate the orifice of the womb, and by being extremely careful not to occaſion herſelf, by her bad management or precipitancy, what ſhe ſhould endeavour to prevent.

When the head of the child has paſſed the mouth of the womb, and the ſhoulders ſtick there, the delivery is looked upon as over, and with reaſon; for neither the *vagina*, nor external *pudenda* afford any great reſiſtance: only it ſometimes happens, when it has been neglected to be remedied, that the head paſſing obliquely, bears too much backward towards the *os coccygis*, and lacerates the *perinæum* or partition which ſeparates the *anus* from the *pudenda*, which occaſions a troubleſome inconvenience; but this caſe happens ſeldom, and generally proceeds from want of attention in the midwife.

As ſoon as the child has made its exit, the *pudenda*, *vagina*, and mouth of the womb, form a kind of continued wide canal, through which the midwife can eaſily introduce her hand (after having moiſtened it with pomatum) even into the womb, to ſeparate the after-birth, if it adheres; to extract it, if it is looſened from the internal ſurface of the womb; and if there

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are any clots of blood to bring them away; but theſe parts cloſe ſo ſpeedily, through their elaſticity, that it is not poſſible within a very little time after, to introduce the hand, without great difficulty, and occaſioning exceſſive pain.

CHAP. VI.

Of the diſpoſitions requiſite for delivery.

ONE of the moſt important articles, and for which one ought to be prepared before-hand, is to decide in what manner women ſhould be placed for delivery.

It was cuſtomary formerly to deliver them backwards, with their body bent, leaning upon a table, and their legs pretty wide aſunder; I do not know whether this cuſtom ſtill ſubſiſts in the country, but it has been long aboliſhed in cities. A chair for delivery has been ſubſtituted in the room of it, hollowed before, and is ſtill made uſe of in ſome provinces, eſpecially among the common people. But this has alſo been a long time diſuſed in Paris.

For ſome time afterwards a bed was uſed for delivery, made like a couch, with this difference only, that it was moveable on an axle-tree, which was under the middle of the frame of the bed, by means of which it could be made to incline either way, or be kept in an horizontal ſituation, according as occaſion required, and was fixed in the deſired ſituation by means of a pin. This bed was narrow, to give the midwife more room to act, and covered with a mattraſs, or hard hair quilt, that the woman in labour might not ſink down too much. It had at the end a foot-board, againſt which ſhe might fix her feet, and towards the head two handles, one on each ſide, for her to graſp during the pains. This bed was very

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convenient, principally becauſe thereby the head and ſhoulders of the woman in labour could at pleaſure be raiſed or lowered, without trouble, according as circumſtances might require either of theſe ſituations, as will be ſeen in the ſequel. Nevertheleſs, this bed, though ever ſo convenient and uſeful, is at preſent out of uſe.

The preſent methods of delivering women are reduced to two only, either a common couch, or bed; theſe methods of delivery are more troubleſome for midwives, and more inconvenient for women in labour: when they are delivered in bed, becauſe the bed is thereby always tumbled and fouled, and occaſions a great deal of trouble to make it again when the labour is over, and to put the lying-in woman into bed again. But a woman would have the vapours if ſhe ſaw a bed for delivery brought into her chamber; and this reaſon upholds the cuſtom.

At the approach of labour, the *pudenda*, *vagina*, and mouth of the womb, are to be well lubricated with pomatum, or freſh butter; they even ſhould be fomented with an emollient decoction of the roots and leaves of mallows, bearsfoot, linſeeds, and the like, if the leaſt hardneſs is met with; or, which is ſtill more efficacious, ſhould be expoſed to the vapour of this decoction, made very hot, and placed under a cloſe-ſtool, on which the woman in labour ſhould be ſeated.

At the firſt attack of labour-pains an emollient clyſter or two, prepared with butter, or oil of ſweet almonds, and even purgative clyſters, with honey of mercury, or lenitive electuary, if the body is coſtive, ſhould be adminiſtred, to empty the gut *rectum*; for the ſame reaſon, to empty the bladder, the woman in labour ſhould be perſuaded to endeavour to make water, and if the labour is tedious ſhould repeat this ſeveral times, becauſe by thus emptying the *rectum*

and bladder, the paſſage of the child is much facilitated.

It is unneceſſary to remind the midwife to take off whatever rings ſhe may have upon her fingers; nobody can be ignorant that this is a neceſſary precaution in labour. It were to be wiſhed that ſhe had a ſmall hand and long fingers, but this is an advantage given by nature, and not to every one; nevertheleſs, thoſe who are deſtined to this employment ſhould take care to preſerve the flexibility of their fingers, by avoiding all kind of work which might tend to contract, or make them ſtiff.

As to bleeding, if the woman has not been bled during her pregnancy, or has loſt but very little blood, if ſhe is young and has a ſtrong pulſe, it will be right to loſe blood at the beginning of labour. In the contrary circumſtances, it will be moſt proper to wait till the nature of the labour, or the ſupervening accidents, oblige you to have recourſe to it

BOOK II.

Of natural labours, where the child preſents favourably.

THESE labours are of two kinds, in one the infant's head preſents, in the other its feet. I ſhall examine in this book, theſe two kinds of labour in every caſe in which they can poſſibly offer.

CHAP. I.

Of the firſt kind of natural labour, in which the child's head preſents.

THE firſt kind of natural labour comprehends three circumſtances: 1ſt, that the infant's head preſents, and its head only, by which it may the better exert its force, and make its paſſage. 2d, That it hath its face turned downwards. 3d, That its ſituation is ſtraight, in ſuch a manner that the top of its head anſwers directly to the orifice of the womb, and can eaſily enter therein.

Theſe three circumſtances are the neceſſary conſequences of the change which the turning for birth, when it is not diſturbed, makes in the ſituation of the infant towards the end of the ninth month. Alſo this labour, though it comprehends three circumſtances, is the moſt frequent of all labours, and even, according to the common opinion, the only one which is natural.

In this kind of labour, as well as in all the others, which I ſhall treat of in the ſequel of this treatiſe, it is neceſſary to diſtinguiſh four different periods, to determine the different objects on which the midwife ought to fix her attention: the prelude of labour;

its beginning; its height; and end, or exit of the child.

In the prelude, the woman who expects to be brought to bed, firſt feels ſome ſlight pains, cauſed by the motion of the child's body, feet, or heels, which the French uſually call the *mouches.* Theſe pains are more or leſs ſharp, more or leſs frequent, and of ſhorter or longer duration, according to the vivacity of the child.

2dly, Sometimes, when the pains are rather violent, they cauſe ſome contraction of the womb; that is to ſay, ſome effort, or in other words, a pain reſembling labour-pains. But theſe pains are neither regular, nor ſufficiently ſupported, and conſequently no way efficacious.

3dly, The child ſeems to paſs intirely downward, and women, who are not very experienced, imagine the child will fall down.

4th, The orifice of the womb begins to open, through the impulſe of the child, and there oozes, in ſome women, a ſmall quantity of a milky ſerous fluid, which was contained between the *chorion* and the womb. Faint-hearted, young, and unexperienced women buſy themſelves about theſe ſlight appearances of approaching delivery much more than they ought, which thoſe never do who have more courage, and eſpecially if they have already had a child.

The beginning of labour is pointed out by more certain ſigns.

1ſt, The pains are more violent, more frequent, and accompanied with more proportionable efforts, which ſhews that the child is briſkly agitated in the womb, and ſtruggles hard to come into the world.

2dly, Theſe efforts bear down towards the *vagina*, and force, by degrees, the orifice of the womb to open for good, and dilate itſelf ſufficiently to allow the head of the child to be felt.

3dly,

3dly, At this time, as the head of the child does not yet entirely ſtop up the mouth of the womb, the waters of the *amnios* ooze round the ſides, and puſh before them a part of the membranes which cover the head of the child, and form a tumour like a bladder full of water, which deſcends into the *vagina*.

4thly, The waters appear under two ſhapes, which it is neceſſary to diſtinguiſh: ſometimes the tumour is narrow and long; ſometimes wide and flat. It is narrow when the mouth of the womb is but little opened; becauſe the width of the tumour anſwers always to the dilatation of the mouth of the womb, which is as it were its baſis: it is at the ſame time long, becauſe, the head of the child not cloſing up the paſſage, the waters continue to fall into the tumour, and lengthen it more and more. On thecontrary, when the mouth of the womb diſtends eaſily, and the head of the child ſticks there, at leaſt the crown of it, the tumour is wide; becauſe the opening of the orifice is large; and it is flat, becauſe the head of the child hinders its oozing much; and the ſmall quantity, which is already accumulated, is obliged to become flattened, in proportion, as the bag is diſtended.

This ſecond period of labour is ſometimes tedious, when the pains and efforts are weak and ſlow; or when the obſtacles which the child meets with from the orifice of the womb are great. From whatever cauſe the difficulty proceeds, the labours, which are long in the beginning, are commonly difficult and laborious: nevertheleſs, this is liable to an exception in timorous and unexperienced women, who reckon too ſoon the beginning of their labour.

Every part is in action in the height of labour; and it is this period which is properly called labour. 1ſt, The infant is violently agitated; the womb contracts forcibly on the body of the child; the *diaphragm* and muſcles of the belly force ſtrongly downwards;

the pains are almoſt without intermiſſion; the efforts or ſtrainings anſwerable to the pains, and bear downward without relaxation.

2dly, Theſe different cauſes united haſten the dilatation of the mouth of the womb, which at length opens ſufficiently to allow the child's head to paſs. When it is forced into this orifice as far as the ears; that is to ſay, its wideſt part, the child is ſaid to be in the paſſage.

3dly, About this time the waters break; that is to ſay, the elongation of the membranes, in the ſhape of a bag, which contained the waters, tears, and ſuffers them to run off; this is called the firſt waters. As the head of the child advances in the paſſage, and the membranes cannot come forward likewiſe, the water contained in this bag from the preſſure it meets with from the child's head muſt tear the bag. It is alſo neceſſary that it ſhould then be ruptured, to open a paſſage for the infant, which ought not to come into the world incloſed in its membranes, which would render its exit more difficult and laborious.

It happens nevertheleſs ſometimes that the infant is born incloſed in its membranes * as in a ſack, which forms a large ſhapeleſs bundle, from whence the child muſt be extracted, by tearing open the membranes. But this caſe is rare, and happens only when the labour is very favourable.

It oftener happens that the child, in coming into the world, is born with a part of its membranes on its head. This is called being born with a hood, which is looked upon as a mark of good fortune †: in fact it is ſo for the child at the time; for this ſuppoſes

* Thomas Bartholine in Actis Hofnienſibus, vol. ii. obſervation 35, page 93.

Frederick Ruyſch, obſervation 11, page 18.

† It is cuſtomary for children to be diſtinguiſhed with a natural hood, which the midwives take away, and ſell to credulous advocates: for pleaders of cauſes are ſaid to be aſſiſted by this.

poſes always an eaſy and quick labour; but it extends no farther.

The heighth of labour is not always the ſame; ſometimes it is very ſhort, and very favourable; two or three good ſtrainings ſuffice for delivery, and every thing is over in a quarter of an hour; but at other times it is long and laborious: ſome women are a long time in ſtrong labour, with hardly any intermiſſion of pains, a long time before they are delivered. This difference proceeds ſometimes from the infant; but more frequently from the ſide of the mother.

When the child is come into the paſſage, labour is drawing towards its end.

1ſt, The firſt effort, and even a very weak one, forces the head forward, and puſhes its ſhoulders into its place: when the ſhoulders are paſſed, the reſt of the body, which continues leſſening in ſize, makes its exit, to uſe the expreſſion, of itſelf.

2dly, The after birth, which comprehends the membranes and the *placenta*, commonly comes with the child: for the violent efforts during labour; that is to ſay, the repeated contractions of the womb have looſened the *placenta*; or at leaſt have ſo ſtrongly ſhook it, that it is ſufficient to pull it gently by the navel-ſtring to extract it.

3dly, When the head of the child has paſſed, as the neck does not entirely fill up the mouth of the womb, the fluid, which ſtill remains in the *amnios* behind the infant, begins to make its eſcape; but does not entirely paſs off, till the ſhoulders are delivered. This is called *The ſecond waters*; or more properly ſpeaking, *The true waters of delivery*, the impetuous paſſing off of which finiſhes the delivery of the child.

Ælius Lampridius in the Life of Antoninus Diadumenus. Lampridius adds, that the emperor Antoninus, ſon of Macrinus, was called *Diadumenus* in his youth; that is to ſay, *crowned*; becauſe he was born covered with a hood of this kind, ſhaped like a crown, which was looked on as a preſage of empire, to which dignity he arrived.

4thly, At the ſame time the ſerous fluid, which oozes from the *vermicular*, or lacteous veſſels, eſcapes alſo between the womb and *chorion* entirely pure, if the after-birth ſtill adheres to the womb; or mixed with blood, which oozes from the veins, if the *placenta* is entirely, or in part looſened. This diſcharge is called the *lochia*, or cleanſing, which continues for ſeveral days after delivery.

In each of theſe different periods of labour, the midwife has different obſervations to make, and different aſſiſtances to give.

1ſt, In the prelude to labour, ſhe ought to examine the ſtate of the mouth of the womb, to enable her to judge whether it begins to dilate, and whether any kind of fluid yet oozes, from whence ſhe may infer whether delivery is at hand or not.

2dly, She ought alſo to be a judge of the pains, whether true or falſe. True labour-pains begin from the loins, and extends generally to the navel; which points out that they ariſe from the bottom of the womb, from whence they preſs downward towards the neck of the womb and the *vagina*. Theſe are always accompanied with, or followed by, a dilatation of the mouth of the womb: the want of one of theſe circumſtances, and eſpecially of them both, prove theſe pains falſe.

3dly, She ought alſo to be able to form a judgement whether theſe pains are efficacious, or not. True labour-pains are always efficacious, and foretel approaching delivery, when they are ſtrong, frequent, and ſudden: but falſe pains are always inefficacious, and give reaſon to apprehend a tedious and difficult labour, eſpecially if they are weak, ſmall, and happen but ſeldom.

4thly, But in every caſe the midwife ſhould appear compoſed, and as well as hearten the woman in labour by words, encourage her by her looks.

In the beginning of labour, ſhe ſhould examine firſt whether the mouth of the womb is flat, thin,

ſoft, eaſy of dilatation, and already ſufficiently opened, which aſſures a favourable delivery.

2dly, Whether the dilatation of this orifice encreaſes from time to time ſufficiently quick, which circumſtance alſo promiſes ſpeedy delivery.

3dly, Whether the tumour which the waters form is large and flat; and whether it grows ſtill bigger and flatter from time to time, which ſhews the progreſs of the dilatation of the mouth of the womb.

4thly, Whether the head of the child preſents; which is known by its roundneſs, and is a certain ſign of a natural birth.

In this period of labour, the midwife has little to do, except to endeavour to aſſiſt the dilatation of the mouth of the womb. For this purpoſe, ſhe ſhould introduce the fore-finger and middle-finger of the right-hand, well lubricated with pomatum, or freſh butter, and placed cloſe together: theſe fingers are to be gently ſeparated; and by this means the mouth of the womb will be dilated, eſpecially if ſhe repeats this operation in different directions, and by degrees introduces the reſt of her fingers.

It is in the heighth of labour that the midwife ſhould be principally attentive. Firſt, She muſt continue to aſſiſt the dilatation of the mouth of the womb, by the means which has been juſt now pointed out.

2dly, She muſt direct the woman in labour to regulate and keep up her pains and ſtrainings; that is to ſay, to keep her breath, preſs ſtrongly downwards, and perſevere in this method as long as poſſible.

3dly, When the child's head is engaged in the paſſage quite to its ears, ſhe muſt draw off the waters by breaking the membranes or bag which contains them. Generally this bag ruptures of itſelf about this time; and it is right to wait for its breaking naturally, unleſs it appears clearly to be an obſtacle to the delivery of the child. In general, the midwife ſhould be

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careful not to diſcharge the waters too ſoon, becauſe the delivery, which happens when the waters are diſcharged too early, and the parts become dry, is always attended with difficulty.

4thly, The membranes being ruptured, it is of importance ſtill to be aſſured of the ſituation of the child; whether its head preſents properly, with the face downwards; or whether the head alone preſents, from the concurrence of theſe circumſtances, a natural labour of the firſt kind may be foretold. If any one of theſe circumſtances, and eſpecially if ſeveral of them are wanting, a preternatural labour is to be expected, or at leaſt a natural labour of the ſecond ſpecies.

5thly, When the head of the child is in the paſſage, if it meets with any obſtacle, the midwife ſhould introduce the two firſt fingers of each hand, well lubricated with freſh butter or pomatum, to the ſides of the child's head, as far as the ears, to which ſhe ſhould apply them; and then, with the aſſiſtance of a ſtrong pain, endeavour to bring it forward gently; at the ſame time moving it a little to the right and left, to facilitate the bringing down of the ſhoulders. When the ſhoulders are once paſſed, the child follows all at once, and labour is ſoon over.

6thly, When the child is delivered, the midwife ſhould by no means fail examining whether there is another child behind, or a falſe conception. In the firſt caſe, ſhe ſhould endeavour to aſſiſt the delivery of the ſecond child; and in the other, to extract the falſe conception, in the manner as will be explained hereafter.

The after-birth remains ſtill to be extracted. To do this, if it does not come away of itſelf, the midwife ſhould place the child on her lap, on its ſide, with the face turned towards her, to prevent the flooding from ſuffocating it, at the moment it begins to breathe; and ſhould then gently pull the navel-ſtring, to facilitate the coming away of the after-burden; which will eaſily follow, if it is already ſeparated from the womb,

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as it moſt commonly is: but if it ſtill holds by ſome part, ſhe muſt looſen it, by gently ſhaking it, by means of the navel-ſtring, and pulling it lightly towards her, ſometimes in one direction, and ſometimes in another.

2dly, After the extraction of the *placenta*, the midwife ſhould carefully examine whether it is whole; which is eaſily known. If it is not ſo, ſhe ſhould immediately introduce into the womb, before it cloſes, the fore-finger of her right-hand, well moiſtened with pomatum, and make uſe of it, to extract what remains behind, as well as clots of blood, if there are any.

3dly, But if the after-birth withſtands her attempts to extract it a great while, ſhe muſt cut the navel-ſtring with a pair of ſciſſors between the two knots which ſhe has already tied thereon; one towards the mother, the other towards the child: and after having diſembarraſſed the child, and delivered it to the care of an aſſiſtant, muſt endeavour to ſeparate the after-birth in the manner that will be explained in the ſequel.

I ſhall alſo refer to two particular chapters the management of the new born infant, as well as the lying-in woman.

CHAP.

CHAP II.

Of the ſecond kind of natural labour, in which the child's feet preſent.

IT will, no doubt, be wondered at, that I ſhould place footling labour amongſt the number of natural labours; but, I flatter myſelf, this ſurprize will ceaſe, upon an examination of the reaſons which have determined me thereto; the account of which I refer to the following chapter, as I propoſe in this to treat only of the cauſes of this ſituation of the child; the means of finding it out; and the manner of its delivery when both feet preſent, and when one is aſſured, by the poſition of the feet, that the face is turned downwards, which is to be looked on as one of the eſſential circumſtances of a natural labour of this kind.

In the room of the head, the feet preſent; becauſe the infant has not made the turn for birth, or at leaſt has not done it as it ought to be, which may happen from many cauſes.

1ſt, From the ſmallneſs of the child's head, which does not weigh heavy enough to over-balance the feet.

2dly, From the weight of the belly in a dropſical child, which counter-balances the weight of the head ſufficiently to hinder the child's turning for birth, or at leaſt, occaſions it to turn but imperfectly.

3dly, From the ſize of the child's body, which filling up the womb too much, confines the child, and deprives it of the liberty of turning for birth, or doing it as it ſhould be.

4thly, From the ſmallneſs of the womb, which is not ſufficiently diſtended, and does not afford play enough to turn compleatly for birth.

5thly,

5thly, From there being twins, which by preſſing and confining one another, prejudice the freedom of each other's motion.

6th and laſtly, From the want of a ſufficient quantity of fluid in the *amnios* to ſuſpend the child, and facilitate thereby its turning for birth. To which may be added, the too great obliquity of the womb, inclining forwards, backwards, or ſideways, which occaſions, (though the child does turn for birth,) its head, in the room of falling againſt the mouth of the womb, to preſs on the ſide of the womb, which, from its obliquity, is ſtill lower, and by this means occaſions the feet to preſent.

A thouſand other accidents, ſuch as a fall, a falſe ſtep, a jolt of a carriage, &c. may change the poſition of the child, which was at firſt properly ſituated, and thereby place its feet where its head was placed before.

It is the duty of a ſkilful midwife to know early, and, if ſhe can, at the beginning of labour, whether the child's feet preſent; for this will ſerve to regulate her conduct.

Firſt it may be gueſſed even before the womb is dilated, or at leaſt before it is ſufficiently ſo to introduce the finger, from its orifice not forming a round, equal, and large tumour, as always happens when the head preſents: but, on the contrary, a ſmall unequal angular tumour, ſuch as the feet muſt naturally occaſion.

To this conjecture may be added, that which nature furniſhes. The labour pains and ſtrainings are always more weak, ſlow, and languid, when the child's feet preſent than when the head preſents. In this laſt ſituation, the feet, which are towards the bottom of the womb, by their kicking and whincing, occaſion ſharp and frequent pains, and proportionable efforts; in the room of which, when the feet preſent, the head, which then is towards the bottom of the womb, remains there in quiet, without making any impreſſion,

preſſion, or at moſt occaſions but a ſlight uneaſineſs.

It can more certainly be known, whether the child's feet preſent when the womb is ſufficiently dilated to allow of introducing a finger or two, though the membranes are not yet ruptured; becauſe the feet can eaſily be known through the membrane, and be diſtinguiſhed from every other part: beſides, the tumour formed by the waters in the *vagina* is in this caſe very long and narrow. It is very long, becauſe the mouth of the womb not being exactly cloſed up by the feet, as it is by the head, the fluid contained in the *amnios* oozes out in great quantity. It is narrow, becauſe the orifice being but little dilated, the ſize of the tumour, which is always anſwerable to the dilatation, can be but very ſmall.

Yet one cannot be abſolutely certain of this circumſtance, until the membranes are ruptured, and the naked feet can be perceived without any medium; but the midwife ſhould not ſtay for this abſolute certainty, but when all theſe circumſtances concur to prove that the child's feet preſent, it is neceſſary, if the membranes do not rupture of themſelves, to tear them as ſoon as poſſible, to prevent thoſe accidents which might happen from this poſition of the child, if left entirely to nature. It is true, that by this means not only the firſt waters, but even the ſecond, are diſcharged, which might prejudice delivery. But this inconvenience muſt be put up with, from the neceſſity there is to do quickly whatever is proper in this kind of labour, which cannot be done, unleſs the membranes are ruptured, as will be hereafter ſhewn. It is ſufficient that the midwife is aware that when ſhe has taken this ſtep, ſhe muſt not truſt to nature, as may be done when the child's head preſents, but muſt lend her aſſiſtance, and perform the delivery as quick as poſſible, to reap the benefit of the moiſture which remains in the membranes and paſſage.

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The midwife's aſſiſtance, in this firſt caſe, is confined to her aiding the dilatation of the mouth of the womb.—To do this, ſhe muſt introduce her two firſt fingers into the orifice, having firſt well moiſtened them with pomatum; if ſhe cannot do this, ſhe muſt endeavour to dilate the orifice gently with one finger only, if ſhe cannot introduce more without uſing too great violence, though ſhe will ſucceed better when ſhe can introduce two or three, or even all the fingers together, becauſe by diſtending them gradually, the orifice is proportionally dilated, equally in every direction.

By this means the midwife is ſoon convinced of the poſition of the child: it is an advantage if both feet preſent, but before any uſe is made of this circumſtance, ſhe ſhould be well aſſured that both feet belong to the ſame child; for it ſometimes happens that they belong to two different children, which would be both deſtroyed by obſtinately perſiſting to deliver them both at the ſame time.

To determine this, midwives generally examine the conformation of the toes, and the poſition of the two great toes; whence it is eaſy to judge whether they are one a right, and the other a left foot, and whether there is reaſon to conclude they both belong to the ſame child: but however ſtrong the preſumption may be, from this examination, they ſhould not entirely confide in it, in a circumſtance of this importance. They ſhould be very certain, before they haſten labour, that both feet belong to the ſame body; and for this purpoſe, introduce the hand, well moiſtened with pomatum, along one of the thighs, till they thereby find them both united to the ſame body.

But, on the contrary, if one foot only preſents, as frequently happens, the midwife ſhould think of ſearching for the other, after having examined by that which preſents, whether it is the right or left-foot that

is wanting, in order to direct her ſearch in a proper manner.

It was the cuſtom formerly to begin by ſecuring the foot which preſented, by tying it looſely with a ribband. This precaution is ſeldom uſed at preſent, and indeed it is unneceſſary; but as it is attended with no inconvenience, midwives are not culpable who make uſe of it.

It is never very difficult to find the foot which is wanted; ſometimes the knee is found oppoſite the orifice, and it is then eaſy to bring it down. At other times the knee and foot are a little farther removed; but by bending the finger, and ſearching round the orifice, they may be found and brought down. Laſtly, In caſes of neceſſity, the hand, being firſt moiſtened with pomatum, may be ſlid all along the leg and thigh which preſents quite till its union with the other thigh, whence deſcending, it meets with the leg and foot which are wanting.

To bring down the foot which is wanting conveniently, it is of conſequence to prevent that which preſents from advancing too far in the paſſage, becauſe when that is the caſe, the leg and foot which is wanted to be brought down muſt be very much bent, and by that means might be broke. In general the beſt way is to return the child a little back into the womb, if it can be done without violence; or however, to lower the upper part of the woman's body, and raiſe the buttocks with pillows in ſuch a manner as to render the mouth of the womb higher than its bottom; and by this means making the womb deſcend into the belly, and the infant towards the bottom of the womb, procure the neceſſary room to bring down the limb without the leaſt violence.

When the midwife has got hold of both feet at the mouth of the womb or even in the paſſage, ſhe ſhould before ſhe proceeds farther be aſſured they belong to the ſame child, and for this purpoſe employ the means which have been juſt pointed out.

But

But if unhappily the limb of the child is advanced in the paſſage as far as its thigh, it muſt neceſſarily be returned back into the womb, by lowering the woman's body, and elevating her buttocks, as has been already obſerved, in order to ſearch for, and bring down the leg and foot which are wanting, and place matters in a proper ſituation for delivery. I know very well ſome people maintain that children have come into the world in this poſition: if this was the caſe, the thigh which was wanting muſt have been bent inwards; but beſides that one can never be ſure of this flexibility of the child's thigh, it is very imprudent in every reſpect to ſuffer ſuch a delivery to proceed.

When the midwife has got hold of both feet, and is aſſured they belong to the ſame child, delivery is in great forwardneſs; ſhe has occaſion only to make a good uſe of the woman's throes, for in this kind of labour there is hardly any thing elſe to do, as has been obſerved; except to draw the child gently, and by degrees, as far as the buttocks, which is commonly very eaſy. To do this, ſhe muſt lay hold of the child's legs and thighs; but as they are very ſlimy, and the hands being moiſt, will ſlip, they ſhould be wrapt up in ſoft but dry cloths.

2dly, When the child is extracted as far as the thighs, it muſt be examined whether the face and belly be turned upward or downward, which is eaſily known by the ſituation of the heels and toes.

If the face and belly are turned downwards, it is ſo much the better, as this is the moſt deſirable poſture; but they frequently preſent in a contrary poſition, becauſe the child has not been properly turned for birth; and in this caſe the midwife muſt place it in its proper ſituation for delivery.

3dly, To do this ſhe muſt introduce her right hand flattened under its back, and in proportion as the child advances, or ſhe pulls it with her other hand, endeavour gently to turn it. She will eaſily ſucceed in li-

ving children, becauſe in them the body has a firmneſs; but it is more difficult in a dead child, whoſe body has no elaſticity, eſpecially with reſpect to the neck, which does not in the leaſt follow the direction ſhe endeavours to give it.

4thly, When the child is turned, nothing remains but to haſten delivery, though not too precipitately: it was formerly the cuſtom to ſearch for the arms one after another, and place them towards the child's ſide: ſome time afterwards it was the cuſtom to bring down one arm only, and leave the other ſtretched over the head, in order to prevent the head from ſtopping in the paſſage: at preſent, it is uſual to leave them both, and it is the beſt way; delivery is not rendered thereby more difficult, and it is the moſt certain means of preventing the head's lodging in the paſſage.

5thly, Nevertheleſs, as in ſpite of even this precaution, there is always reaſon to be afraid of this accident, becauſe the mouth of the womb begins to contract itſelf as ſoon as the ſhoulders are paſſed, the midwife ſhould exhort the mother (when the child is extracted as far as the ſhoulders) to exert her greateſt efforts, and continue them as long as poſſible, and take the advantage thereof to extract the ſhoulders, and make the head immediately occupy the ſame place, without giving the mouth of the womb time to cloſe.

6thly, But if, in ſpite of this precaution, the child's head ſhould ſtick in the paſſage, ſhe muſt endeavour to diſengage it by degrees, without pulling, by moving it ſometimes one way and ſometimes another, by directing the mother to preſs ſtrongly downwards, and even to take ſome ſternutatory powder to make her ſneeze; but ſhould be careful of putting her finger into the child's mouth to extract its head, becauſe this ends generally in diſlocating its lower jaw.

7thly, and laſtly, When the child is delivered, ſhe is to conduct herſelf with regard to mother and child, in the manner which will be hereafter ſhewn in a particular chapter.

CHAP. III.

A parallel between footling labour, and that in which the head preſents.

ALmoſt all the antients have been of opinion, that the only kind of natural labour was that in which the head preſented, and conſequently looked on footling labour as a preternatural labour.

The deciſion of *Hippocrates* is clear. "If a woman ſays he, * is a long while in labour, it is an almoſt certain ſign that the child preſents croſs-ways, or by the feet; it would have been much better if its head had preſented." He adds, ſome lines lower, "labour is difficult and troubleſome when the child's feet preſent, generally fatal to the mother or child, and frequently to both."

Ariſtotle † ſays the ſame, in more than one place in his Hiſtory of Animals, as well as *Galen* ‡. But *Pliny* § is ſtill more deciſive. "Labour," ſays he, "where the child's feet preſent is preternatural; whence it comes, he continues, that they call thoſe who are thus born *Agrippa*, which expreſſes in Latin the difficulty of their birth." To which may be added, that in alluding to the manner in which dead perſons are carried to their funeral, he eſtabliſhes it as a received maxim **, "That the order of nature is to enter into the world by the head, and the cuſtom of it to go out by the feet."

After the like authorities, it is unneceſſary to aſk the opinion of ſucceeding phyſicians. They unanimouſly agreed in looking upon every kind of footling labour as fatal; and this opinion is ſo generally eſtabliſhed,

* Diſeaſes of women, book, i. p. 50.
† Hiſtory of animals, book, vii. chap. 10. 13.
‡ Uſe of parts, book, xv. chap. 7.
§ Natural hiſtory, book, vii. chap. 8.
** As above.

that even at preſent there is hardly any one who does not pity the condition of a woman in labour when the feet preſent.

There are nevertheleſs among the antient phyſicians ſome, who far from condemning footling labour, have approved of it; and have even adviſed to bring all bad poſtures of the child, where it preſented by any other part than its head, to this kind of labour. Among this number may be reckoned *Celſus*, *Aetius*, *Paul Ægineta*, *Avicenna*, and many others; whoſe opinions on this ſubject I have taken notice of in my *Short Hiſtory of the Art of Midwifry*. There has even been, for ſome time, phyſicians who were of opinion that footling delivery was eaſy and even natural, and who had courage enough to declare it. *Dolæus* * is one of the firſt I know of who dared advance this truth, in which he has been followed by *Govey* †, and even by *Daniel Hoffman* ‡, and by a number of men-midwives, who have all of them put in practice this method of labour in every caſe in which the bad poſture of the child rendered any other kind of delivery difficult or impoſſible.

I quote theſe authors with pleaſure, becauſe they ſpare me the pain of being the firſt advancer of this paradox. But I am ſenſible that I ſhould have advanced it, though I had been the firſt; becauſe I am firmly perſuaded that, *cæteris paribus*, footling labour is leſs painful, ſhorter, eaſier, and more certain, than when the head preſents, and conſequently deſerves to keep the ſecond rank, at leaſt, amongſt natural labours. I even flatter myſelf that this opinion will be embraced, after examining thoroughly, and weighing the reciprocal advantages and diſadvantages of theſe two kinds of labour.

* Medical Encyplopedia, book v. chap. 7. p. 673.

† Treatiſe on the generation of the fœtus, p. 104. and the following pages.

‡ Annotations on Govey's hypotheſis.

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The advantages, which cannot be denied, with reſpect to that kind of labour in which the head preſents, are very great; ſo that it is not the leaſt wonder that they have been thought deciſive.

1ſt, The top of the head is a kind of wedge, more proper to open the mouth of the womb than the feet.

2dly, When the child's head preſents, it can fix its feet againſt the bottom of the womb, and thereby haſtens the dilatation of its orifice; while this aſſiſtance is wanting in footling labour.

3dly, When the head is come into the world, the reſt of the child's body follows without difficulty, becauſe the circumference of the other parts, even of the ſhoulders, is leſſer in children, or at leaſt not larger than the circumference of its head. But, on the contrary, in footling labour, though the feet preſent, the whole circumference of the body remains ſtill to paſs.

4thly, In that kind of labour where the head preſents, there is no danger of the head's ſticking in the paſſage, and being ſeparated from the body, whilſt there is great danger of this in footling labour, eſpecially when the child is dead.

5thly, The greateſt part of the waters are retained in the womb in this kind of labour, becauſe the top of the head exactly ſtopping up the mouth of the womb, prevents their iſſue. By this means they hinder the womb from contracting, preſerve the moiſture and flexibility of the membranes, and, by gradually oozing out, ſerve to lubricate the paſſage, and facilitate the delivery of the child. All theſe advantages are wanting in footling labour, where almoſt all the waters eſcape immediately, becauſe neither the feet nor legs of the child can ſufficiently cloſe up the mouth of the womb.

6thly, When the child's head preſents, the feet, by kicking ſtrongly, irritate the bottom of the womb, and thereby excite the neceſſary throes to accompliſh

delivery; whilſt in footling labour the head irritates but very little: whence it happens that in this kind of labour the throes are deficient.

7thly, and laſtly, When the child's head preſents, the face is almoſt always turned downwards and backwards, becauſe this poſture is the neceſſary conſequence of the turning for birth. On the contrary, the face is almoſt turned upwards and forwards in footling labour, becauſe the child has not been turned for birth, or very irregularly.

The advantages of footling labour over the other are fewer, but of much greater conſequence.

1ſt. In this kind of labour the womb gradually dilates, and the child by preſenting with its feet, and advancing in this ſituation, makes a kind of wedge, the ſize of which is gradually augmented, and produces a gradual and almoſt inſenſible dilatation of the womb; whilſt, in the other kind of labour, the dilatation of this part is brought almoſt immediately to the higheſt pitch it can arrive at.

2dly, In footling labour the midwife is never embarraſſed with the obliquity of the child's poſture, nor the obliquity of the womb which contains it; becauſe when ſhe has got hold of the feet, it is eaſy to rectify the child, and by doing that rectify the womb itſelf. Theſe helps are wanting in the other kind of labour, in which there are ſcarcely any means of correcting the obliquity of the womb and child, and where theſe bad ſituations frequently become fatal, as will be hereafter ſeen.

3dly, and laſtly, In footling labour, by graſping the feet, and afterwards the legs of the child, there is a firm hold to extract, turn, or rectify it; and by this means to aſſiſt women in labour, facilitate delivery, and remedy a great part of its inconveniencies; which is abſolutely wanting in that kind of labour in which the head preſents, where the midwife remains idle, and can be of no ſervice, except in her attempts to help the dilatation of the orifice.

So that, every thing conſidered, there is reaſon to conclude that footling labour is leaſt painful, becauſe the head, which then occupies the bottom of the womb, cauſes no irritation there, or at moſt but very little.

2dly, It is eaſier, becauſe the mouth of the womb is dilated by degrees, and in almoſt an inſenſible manner; and becauſe the midwife, by gently drawing the feet and legs, aſſiſts delivery effectually.

3dly, It is quicker, becauſe it is eaſier to procure this gradual dilatation, than to dilate the mouth of the womb all at once to its utmoſt extent, without reckoning that the midwife aſſiſts on her part this dilatation, by gently pulling the child towards her.

Laſtly, It is as certain, (which follows from the three preceding propoſitions,) and is attended with no other difficulty than that which ariſes from the danger of the child's head lodging in the paſſage. But this danger is extremely leſſened, ſince the method has been taken to leave the child's arms up, in order to hinder the womb from contracting about the child's neck, eſpecially if care is taken to turn the child's face downward, and not to deliver in any other ſituation, becauſe then the chin cannot hang on the *os pubis*, and paſſes without difficulty into the hollow of the *os ſacrum*: after all, the danger of the head's lodging in the paſſage in footling labour ſcarcely ever happens, except in the delivery of a dead child, and then this accident ought not to be laid to the charge of footling labour, becauſe it is in this caſe not made uſe of from choice, but through meer neceſſity, being the only poſſible means of delivering the mother.

Hence we may conclude, that far from being alarmed, as was formerly the caſe, and is ſtill in the country, when the child's feet preſent, we ſhould look upon this kind of labour as advantageous, when conducted by a midwife who knows how to take the neceſſary precautions for the eaſy

paſſage of the head, which have been pointed out in the preceding chapter.

2dly, All children which preſent with the ſhoulders, hands, back, belly, buttocks, &c. ſhould, without heſitation, be brought to this kind of delivery, without loſing time as formerly, in endeavouring to deliver them by the head, which is always very difficult, not to ſay frequently impoſſible.

3dly, Children which preſent with the head obliquely, whether through fault of the child, or of the womb, ſhould be delivered footling, when the midwife has for ſome time endeavoured in vain to rectify their poſition; in which caſe the midwife cannot be too careful to take this reſolution early, before the mother and child are exhauſted by labour, and the internal ſurface of the membranes grown dry by the paſſing off of the waters.

4thly, All theſe advantages are ſufficient to make footling labour be looked on as a natural kind of labour, at leaſt of the ſecond kind.

CHAP. IV.

Of the method of treating lying-in women.

THE duy of midwives, with reſpect to lying-in women, conſiſts chiefly in the conduct which they ſhould obſerve during the firſt day after delivery; during the remainder of the month; and the means they ſhould make uſe of to drive back the milk, if the mother does not intend to ſuckle her child.

As ſoon as the woman is delivered, and the after-birth extracted, the midwife ſhould introduce a warm cloth into the entrance of the *pudenda*, to hinder the cold air from injuring the womb.

Afterwards, if delivery was performed on a couch, ſhe muſt direct the lying-in woman to be carried to her bed; ſhe ſhould then deſire her to make water, which ſhe ſometimes can do without any difficulty; but frequently when the *pudenda* is ſwelled, and ſtrangulates the extremity of the *urethra*, it occaſions very great difficulty.

In this caſe, and even in every other, a poultice, made of an egg or two, beat up with oil of ſweet almonds, and moderately heated in a water-bath, like an omelet, ſhould be applied to relax the lips of the *pudenda* and entrance of the *vagina*, and ſhould be changed every four or five hours, as may be judged neceſſary.

A couple of ounces of oil of ſweet almonds, and an ounce of the ſyrup of maiden-hair mixed together, are generally given to women newly delivered, to appeaſe the cholicky pains.

The midwife may alſo, if ſhe thinks proper, give immediately a baſon of ſtrong broth, eſpecially after a difficult labour.

Laſtly, after the womb has unloaded itſelf for ſome hours, ſhe muſt apply one or two ſquare or triangular compreſſes over the body of the womb,

and

and place on each ſide of the belly a long ſtraight compreſs, which are to be kept on with a bandage moderately tight; but the *pudenda* is to be covered with a warm cloth only.

The following days ſhe muſt obſerve the quantity and quality of the *lochia*; that is to ſay, the cleanſings or diſcharge which follows delivery.

Theſe *lochia* or cleanſings are produced by two different kinds of uterine veſſels: the one are the venal appendages, which, during pregnancy, open into the cells of the *placenta*, and depoſit there the blood neceſſary for the nouriſhment of the child; but which after delivery they evacuate into the cavity of the womb. The others are the lacteal or vermicular veſſels, which let paſs, during pregnancy, into the cells of the *placenta*, a kind of milky juice, deſtined for the nouriſhment of the child; but, which after delivery, is alſo evacuated into the cavity of the womb: though, as has juſt been obſerved, there is a great quantity of milky juice in the *lochia*; yet it cannot be diſtinguiſhed at firſt, becauſe the blood is in the greateſt quantity, and tinges the milk which is mixed with it of a red colour.

This diſcharge of the *lochia* begins to leſſen ſoon after delivery, from two concurring cauſes; one, becauſe the womb, by the elaſticity of its fibres, begins to contract from the moment after delivery; and by its contracting, contracts the mouths of theſe venal appendages and lacteal veſſels: the other, becauſe the mouths of theſe veins and veſſels contract themſelves by the particular elaſticity of their coats.

The firſt of theſe two cauſes acts equally on the mouths both of the veins and lacteal veſſels: but the ſecond is ſtrongeſt in the mouths of the blood veſſels, which poſſeſs a greater degree of elaſticity than the lacteal veſſels, which occaſions the mouths of the blood veſſels to cloſe ſooner, and more perfectly than the lacteals; whence it happens that the diſcharge of blood leſſens quickly after delivery, and

almoſt

almoſt entirely ceaſes towards the fourth or fifth, and ſometimes even on the third day.

In proportion as the diſcharge of blood leſſens, the *lochia* become leſs red, and change entirely white and milky, when the diſcharge of blood totally ceaſes. This diſcharge remains ſome time in this ſtate; becauſe the mouths of the lacteal veſſels which furniſh it have leſs elaſticity, and, in proportion, can leſs eaſily contract and cloſe themſelves. Nevertheleſs, it begins to diminiſh from the ſecond or third day: it leſſens ſtill more towards the fourth or fifth, when the milk has taken its proper courſe; but does not intirely ceaſe before the twentieth or twenty-fifth day, and ſometimes remains even as long as the fiftieth; which depends on the quantity of food allowed the lying-in woman, and more eſpecially on the greater or leſſer degree of elaſticity of the womb or lacteal veſſels.

Women frequently evacuate with the *lochia*, eſpecially at that period when they are called the *green waters*, foreign ſubſtances and humours; ſuch as ropy matter from the ſides of the womb in women of a phlegmatic conſtitution; matter from ſome abſceſs, or hidden ulceration; pieces of the after-birth, which were left in the womb, &c. reſpecting which, it is requiſite that midwives ſhould conſult a phyſician.

To judge of the quantity of the cleanſings, the midwife, or at leaſt the nurſe, who is generally intruſted with this circumſtance, ſhould change often the cloths, eſpecially during the firſt days; for afterwards, changing them twice a day is generally ſufficient.

Every night and morning, when the cloth is changed, the parts ſhould be fomented with hot barley-water, either alone or mixed with a little milk; or, which is more common, with a weak decoction of linſeed and chervil, or a little honey of roſes may be added, if there ſhould be any chaps in the lips. Afterwards,

when

when the *lochia* begin to ceaſe, a ſlight aſtringent decoction may be uſed, to help the elaſticity of the parts, compoſed of red roſe-buds, plantain, wild tanſy, and even pomegranate-bark.

If the lying-in woman is coſtive, a clyſter muſt be adminiſtered every day, compoſed of a decoction of mug-wort, feverfew, and melilot-flowers, to which may be added, ſome oil of ſweet almonds.

In proportion as the womb contracts itſelf, the bandage which ſurrounds the belly ſhould be tightened, to brace up the integuments of the belly, and prevent, or at leaſt leſſen, thoſe wrinkles which are uſually the conſequences of child-birth.

Laſtly, After forty or fifty days; that is to ſay, when the diſcharge of the *lochia* is entirely ceaſed, the lying-in woman muſt take ſome gentle phyſic; and, if agreeable, may go into the warm bath.

After all, midwives ſhould direct their attention to the milk-fever, and the conſequences of this fever. It is wrong that they frequently neglect ſo important a duty, and leave to meer nurſes the care of that which often requires the greateſt ſkill of a phyſician to determine: what is proper to be done in this caſe requires a long detail, and a variety of circumſtances to be conſidered.

I have juſt obſerved, that after delivery the mouths of the lacteal veſſels empty into the cavity of the womb the milk with which they are diſtended, which continues pretty plentifully till the end of the ſecond day, or beginning of the third: but then this milky diſcharge begins to diminiſh conſiderably, either becauſe the womb, in its own contraction, contracts the mouths of the veſſels which furniſh it, or from the mouths of theſe veſſels cloſing of themſelves, through their own elaſticity, as has been already remarked. Conſequently the uterine milk, which has no longer its former free iſſue, regurgitates into the blood, and is at laſt forced to mix with the milk of the breaſt; with which it has the greateſt affinity, or to ſpeak more properly,

properly, from which it does not at all differ, and thereby cauſes the milk fever, with its ſymptoms, which happens in lying-in women the ſecond or third day after delivery: for at this time, the milk being carried all at once, and in great plenty, into the veſicles of the breaſt, ſwells them to ſuch a degree, that they compreſs the neighbouring veins, and force the blood to ſtagnate there. The painful tenſion, ſwelling, and heat of the breaſts, where the milk is accumulated, as well as the painful cords which extend from the breaſts as far as the axillary glands, and are formed by the ſwelling of the lymphatic veſſels, deſtined to convey the milk there, are owing to the union of theſe two cauſes. In this caſe, the outſide of the cheſt is compreſſed, reſpiration is diſturbed and interrupted, the pain is felt quite behind the ſhoulders, and the patients are obliged to keep their arms ſtretched out, not to compreſs the axillary glands, which are very painful.

Even this is not all; the milk, by ſtagnating a long time in the blood, grows ſour, and thereby becomes fit to coagulate, which occaſions a ſhivering more or leſs violent; but almoſt always marked by a hard pulſe, paleneſs of the face and nails, convulſive dryneſs of the ſkin, chattering of the teeth, &c. This cold fit laſts ſometimes for two hours with the ſame violence, and at other times goes off almoſt in an inſtant; but is always followed by a fever fit, more or leſs ſtrong, in proportion to the preceding ſhivering, the ſame as in intermitting fevers. This fever, after having continued fifteen or twenty hours, and ſometimes even a day, or a day and an half, terminates at laſt in the ſame manner as the fit of an ague, by a plentiful ſweat; unleſs the concurrence of ſome particular cauſe changes this ſlight and intermitting into a continual fever.

Theſe accidents, and the fever which accompanies them, vary through many reaſons, according as the nouriſhment allowed to lying-in women is more or

leſs

leſs ſtrong, and furniſhes a greater or leſſer quantity, a thicker or a thinner chyle.

According as the veſicles of the breaſts are narrower, as in the firſt or ſecond lying-in; or more dilated, as happens in the ſubſequent lyings-in.

According as the womb contracts more or leſs quickly, and the lacteal veſſels cloſe more or leſs exactly.

Laſtly, According as the milk eſcapes more or leſs plentifully through the nipples.

This laſt reflection, which is confirmed every day by experience, makes us comprehend eaſily why the milk fever, and its conſequences, were formerly much leſs troubleſome, when it was the cuſtom, as ſoon as the milk began to regurgitate, to have the breaſts of the lying-in women ſucked by women accuſtomed to this employment: thereby an eaſy iſſue was furniſhed for the milk; the painful ſwelling of the breaſts, axillary glands, and the hard cords which paſſed from the breaſts to theſe glands, were leſſened; a part of the milk which ſtagnated in the blood was taken away; the cauſe of the fever, and the fever itſelf, was thereby diminiſhed; and theſe milky abſceſſes were prevented, which are ſo frequent and dangerous at preſent.

Unfortunately this cuſtom is out of faſhion at preſent, becauſe it is ſuppoſed to be prejudicial to the preſervation of the beauty and firmneſs of the neck and breaſt. This reaſon, which at the bottom is perhaps not ſo true as ſuppoſed, has prevailed to ſuch a degree, that hardly any woman follows the antient practice. They all endeavour to drive back their milk; that is to ſay, oblige all that which does not eſcape through the nipples, to paſs from the breaſts into the axillary glands.

For this purpoſe, from the day after delivery the breaſt of the lying-in woman is covered with lint even with the breaſts, and compreſſes are applied over them, which are to be kept tight on by a napkin

tied

tied round the breaſts. This bandage is to be continued till the milk fever is over.

In this ſtate very little milk can paſs into the breaſts, becauſe they are ſtrongly compreſſed; and the little which does paſs there, far from being evacuated by ſuction, cannot even ooze through the nipples, which are themſelves compreſſed: it muſt therefore paſs from the veſicles of the breaſt into the axillary glands; and from theſe glands into the left *ſubclavian* vein, in which it again mixes with the blood. Thus all the milk of the lying-in woman remains in the blood; whence, either from its being retained, or from its remixture, and the great difficulty there is to evacuate it by ſweating, urine, ſtool, gives always reaſon to fear that this practice will end in ſome abſceſs, which too frequently is the caſe.

However blameable this new practice is, as the midwife is forced to make uſe of it, it is neceſſary for her to be inſtructed in the methods that ſhould be made uſe of to prevent its bad conſequences as much as poſſible.

1ſt, While the ague fit continues, the patient ſhould be covered up warm, and even warmed with hot napkins, avoid giving her any drink, however thirſty ſhe may be; becauſe, we know, by experience, that this indulgence ſerves only to prolong and render more ſevere the ſhivering.

2dly, As ſoon as the heat begins to come on, the cheſt and arm-pits are to be embrocated with oil of roſes, or oil of ſweet almonds, to relax theſe parts, and render their ſwelling attended with leſs pain.

3dly, The breaſt and arm-pits are to be afterwards covered with lint, which is to be kept on by a ſimple compreſs of linen, in order to preſerve in the milk which accumulates there a conſtant and equal heat, and thereby hinder its coagulating.

4thly, This dreſſing is to be kept on with a handkerchief, or fine napkin, which is tightned a little, to moderate

moderate the too great ſwelling of theſe parts, taking care not to compreſs the breaſts too much.

5thly, In this caſe, the uſe of clyſters, compoſed of a decoction of mugwort, feverfew, and melilot, to which may be added, oil of ſweet almonds, or ſweet oil, cannot be too often repeated: by this means a part of the milk with which the blood is loaded paſſes off by ſtool.

6thly, The lying-in woman muſt drink plentifully of warm ptiſan, or, at leaſt, the cold taken off, compoſed of an infuſion of maiden-hair, or a decoction of the roots of the ſweet-flag, to provoke the ſweating and urine, or to evacuate by one or other of theſe ways a part of the milk.

7thly, It would be right if lying-in women could be perſuaded to keep to ſpoon-meats only till the milk-fever was over, in order to leſſen the quantity of their milk; but, at leaſt, they ſhould obſerve a ſtrict regimen, and take nothing except weak broths during the continuance of the fever. When that is entirely over, their broth might be ſtronger, and even ſoop allowed them: but ſhould not be permitted the uſe of fleſh-meats till the ninth or tenth day.

8thly, and laſtly, If the milk-fever laſts longer than thirty or forty hours, or is accompanied with any bad ſymptoms, ſuch as light-headedneſs, violent looſeneſs, convulſions, inflammation of the breaſt, &c. the midwife muſt inſiſt on ſending for a phyſician, and leave the patient to his care entirely.

CHAP.

CHAP. V.

Of the management of the new-born infant.

THE management of the new-born infant, which now enters upon a new kind of life, conſiſt in a variety of particulars.

The navel-ſtring is to be firſt tied: for this purpoſe, take a needleful of waxed thread or ſilk, doubled five or ſix times, about a quarter of a yard long, with a knot at each end, to keep the threads together.

The navel-ſtring muſt be tied at about an inch or two's diſtance from the navel, by paſſing the ligature once round it, and faſtening it with a double knot; then paſs the ligature back again, and make a ſecond double knot, oppoſite the firſt.

The remainder of the navel-ſtring is to be divided at about an inch and half diſtance from the ligature; and this may be done boldly, for the child feels nothing from the operation.

The ligature is to be made ſufficiently tight, to ſtop the blood; but not ſo tight as to endanger cutting the navel-ſtring.

The navel-ſtring muſt be wrapt up in a piece of ſoft linen, and laid along the belly, placing a little compreſs under and another above it, keeping the whole on with a ſmall roller round the belly.

The midwife muſt examine for ſome days the ſtate of the navel-ſtring. In ſome children, it is ſo thick and puffed up, that the ligature is ſubject to become looſe, in proportion as it dries away; and in this caſe, it ſhould be tightened, or a freſh one applied.

The navel-ſtring, being dried away, comes off of itſelf the ſixth or ſeventh, or at the lateſt, the ninth or tenth day. It ſhould be ſuffered to fall off of itſelf, without pulling or ſhaking it, that the navel may be well cloſed.

In whatever place the ligature has been made, the navel-ſtring always falls off about the navel; becauſe the navel-ſtring is a part which does not belong to the infant, but has been ſoldered on the navel, and ſeparates at that particular part where it was affixed.

The blood, which remains in the veſſels of the navel-ſtring, ſhould not be preſſed back into the child's body, for this cannot be otherways than prejudicial to it, eſpecially with reſpect to the blood of the umbilical arteries; but the ligature ſhould be made without ſqueezing out the cord.

It is an uſeleſs precaution to leave the navel-ſtring longer in boys than in girls; and the reaſons alledged to authorize this practice are ſo abſurd as not to deſerve being refuted.

The child ſhould be waſhed, when held in its blankets, before the fire.

The whitiſh mucus, and the blood with which it is uſually beſmeared, are to be taken off with a rag, wetted with warm red wine and water. If it adheres ſtrongly, a little oil of ſweet almonds, a little freſh butter diſſolved in warm red wine, or a little ſoap and warm water, may be uſed to get it off: but if it is very difficult, we ſhould not obſtinately perſiſt in our attempts to get it off directly, becauſe it will in a few days come off of itſelf.

The midwife muſt firſt examine the ſtate of the bones of the head, the ſutures and fontanel, and gently rectify them if they have occaſion.

2dly, The ſtate of the bones of the noſe, and raiſe them if they are depreſſed.

3dly, The ſtate of the joints, to render them free and ſupple.

4thly, The ſtate of the yard in boys, of the *pudenda* in girls, and of the *anus* in both ſexes, to be aſſured the paſſage of theſe parts is open.

5thly, The ſtate of the limbs, to ſee whether they are contuſed or not; in which caſe they are to be

embrocated

embrocated with oil of ſweet almonds, mixed with *arquebuſadé* water.

The evacuation of the urine and *meconium* are to be procured. Generally the child makes water of itſelf, while it lies before the fire: it begins alſo to void the *meconium*, but very imperfectly.

To complete this evacuation, it is common to give the child frequently a tea-ſpoonful of oil of ſweet almonds, mixed with an equal quantity of ſyrup of violets, or ſolutive ſyrup of damaſk roſes.

Afterwards, the child is to be ſwathed; and in doing this, care muſt be taken to place a compreſs on the fontanel, fixed to the biggin or cap.

To place ſmall pieces of linen behind the ears, under the arm-pits, and on each groin.

To place a compreſs on the breaſt, and a clout between its thighs.

To ſwathe it ſufficiently tight to ſupport its body; but not ſo tight as to incommode it.

No food ſhould be given the child for fifteen, twenty, or twenty-four hours; but it may ſuck a little ſugared wine, to concoct the phlegm in its ſtomach.

Laſtly, If the child when new-born is very weak from the difficulty of the labour, it is to be excited and revived, by rubbing it with warm cloths; by applying on its ſtomach and breaſt, compreſſes dipt in hot red wine; by ſpirting wine in its face, and in its mouth; by tickling the ſoles of its feet with a little bruſh; and making it ſmell a raw onion.

But it is uſeleſs to apply the *placenta* on its belly, or dip it in hot red wine: though after all, as this practice can be attended with no bad conſequences, it may be allowed of.

BOOK III.

Of preternatural Labours.

PReternatural labours are of two kinds: in the one, though the child preſents in a natural poſture; that is to ſay, with its head or its feet, yet its body or its limbs are in ſuch a poſition, as to prove an obſtacle to delivery. Labours of this kind are common enough, generally not very dangerous, and comprehend but a ſmall number of caſes. In the other kind, the child inſtead of preſenting in a natural poſture; that is to ſay, with the head or feet, preſents with ſome other part, which renders in this poſture delivery very difficult, and almoſt always impoſſible. Labours of this kind are dangerous, furniſh a great number of particular caſes; but happily theſe caſes happen but ſeldom.

CHAP. I.

Of labours, in which the child's head preſents, but in ſuch a poſition, as to prove an obſtacle to delivery.

IT is not enough to make a natural labour for the child's head to preſent, but it muſt at the ſame time preſent in a proper poſition. Thus, it is neceſſary for the head and body to be in the ſame direction with the *vagina*, to be able to paſs through it eaſily; the head muſt preſent alone, without any other member; and the face muſt be turned downwards, for the reaſons which have been ſeveral times given. As the want of one of theſe circumſtances is ſufficient to make a preternatural labour, though the child's head preſents; there reſult three different caſes, which each require a particular examination.

CASE I.

When the child's head and body preſent obliquely, with reſpect to the vagina.

THE obliquity of the child's head and body, with reſpect to the entrance and direction of the *vagina*, occaſions the child, inſtead of taking the right way for delivery, to ſtrike againſt one of the ſides of the womb, and preſent different parts of its head, according to the part of the orifice againſt which it is preſſed. Suppoſe the child well turned for birth, and its face downwards: in this caſe, if the top of the head meets againſt the anterior ſide of the orifice, the child's face will preſent. If it lodges on the oppoſite ſide, the back part of the child's head will preſent. Laſtly, Either the right or left ſide of the head will preſent, according as the top of the head ſhall lodge on the left or right ſide of the mouth of the womb. But the poſitions of the child will be directly oppoſite in the ſame caſes, if we ſuppoſe that in preſenting obliquely to the mouth of the womb, it was turned its face upwards, in a contrary direction to that we have juſt been deſcribing.

As we here ſuppoſe the womb is ſtraight, and placed in the ſame direction with the *vagina*, ſo that its ſituation does not at all contribute to the obliquity of the child, this caſe can be attributed to the irregularity of the child's turning for birth only, which has not been ſufficient, when the head catches againſt the anterior ſide of the mouth of the womb; has been too great, when it lodges againſt the poſterior ſide; and has deviated to the right or left, when the head lodges againſt the right or left ſide of the mouth of the womb.

From whatever cauſe this bad poſition of the child ariſes, it is plain that it hinders delivery while it laſts; ſo that to prevent both mother and child from being

exhauſted by uſeleſs efforts, it muſt as ſoon as poſſible be remedied. But though there are different caſes where this oblique poſition of the child, with reſpect to the *vagina*, may be met with, I ſhall examine here that only in which the womb being placed in the ſame direction with the *vagina*, conſequently happens from the child only. I ſhall ſhew hereafter * what is proper to be done when the obliquity of the child is owing to the obliquity of the womb itſelf.

In the preſent caſe, then, to rectify the head of the child, and thereby the reſt of its body, the following method muſt be purſued, without loſs of time.

1ſt, The woman is to be placed on her back, with her head and body lower than her hips, and the body turned a little towards the oppoſite ſide to that againſt which the child's head is lodged: the bed, which has been deſcribed before †, is very convenient to place the woman in labour in this ſituation without trouble; but this may be done as well in a common bed, by means of pillows.

2dly, This poſition, in which the woman is placed, occaſions the womb to aſcend from the *pelvis*, or baſon, into the cavity of the belly, where it is more at liberty, and the child returns alſo towards the bottom of the womb, by which means the head is leſs ſtrongly preſſed againſt that part of the mouth of the womb againſt which it is jambed: the hand can alſo then be introduced, being firſt well moiſtened with pomatum, between this part and the child's head, to gently rectify it, place it in a proper direction, and keep it there.

3dly, In this circumſtance, the return of a labour pain is waited for, and by the aſſiſtance of the contraction of the womb, the crown of the child's head is placed in the middle of the paſſage, in its proper ſituation, which decides that of the reſt of the body. When it can be done, the woman is to be placed beforehand in

* Book IV. chap. i. † Book I. chap. v.

a horizontal ſituation, that the firſt effort may more eaſily puſh the child's head into the paſſage.

4thly, If by this means the midwife cannot gain room enough to diſengage the child's head, and bring it directly into the paſſage, ſhe muſt introduce her hand where there is the freeſt entrance, as far as the child's ſhoulders, to puſh it inwards, to be able more eaſily to rectify the head: for if ſhe was imprudent enough to attempt to return the child back by the head, ſhe would run the riſque of cruſhing its ſkull.

5thly, Theſe means are generally ſufficient to rectify the head and body of the child: but if any obſtacle ſhould be met with, which cannot be overcome, the laſt reſource is to return the child, and deliver by the feet, in the manner I ſhall hereafter explain.

CASE II.

One or both hands preſenting with the head.

THIS caſe happens when the child in turning for birth reſts one or both its hands on its head, in which caſe they preſent before the head, or at leaſt together with it.

When delivery is advanced, it may be ſuffered to go on in this manner in women who have already had ſeveral children, or in whom the mouth of the womb is thin, ſoft, and eaſy of dilatation: it is only neceſſary to ſtraighten the arms, and apply them againſt the head in ſuch a manner as to prevent the elbows from making an angle.

But if there is reaſon to apprehend a very difficult and tedious labour from this poſture of the child, it muſt be remedied.

By placing the woman on her back, with her hips higher than the ſhoulders, to facilitate the returning the child into the womb.

By puſhing the child gently back, at the ſame time, towards the bottom of the womb; and this may be effected, by reſting the extremities of the fingers againſt one of its ſhoulders.

By placing the hand and arm on the ſide, by means of the room which has been acquired, and keeping the head oppoſite the mouth of the womb, till the return of a pain.

By taking advantage of the pain, to engage the head in the orifice, and thereby preventing the hand and arm from preſenting again.

But if the midwife finds it difficult to return the arm, and place it in its proper poſition againſt the ſide, and is of opinion, that this poſture will render labour tedious, the laſt ſtep to be taken, is to turn the child, and deliver by the feet, as has been ſeen in the ſecond chapter of the ſecond book; and as will be ſhewn in this book, chapter the 3d, caſe the 1ſt.

CASE III.

Of a child's coming with its face uppermoſt, turned towards the os pubis.

THIS bad poſition of the child but ſeldom happens in labours in which the head preſents; it nevertheleſs may happen on ſome occaſions.

When the child is ſituated in the womb, contrary to its natural poſition, its back againſt the belly, and its belly againſt the back of the mother; in this caſe, in turning for birth, its face will be turned towards the *os pubis*: but this caſe, ſuppoſing it ever happens, happens but very ſeldom.

When the child does not turn properly for birth, from ſome accident.

When the child of itſelf, well placed, is obliged to turn the contrary way, to enter the *vagina*, which happens to women in whom the orifice of the womb is turned back towards the *os ſacrum*.

This

This poſition hinders delivery but little, and is attended with no bad conſequence;

Except that the child's face, and eſpecially its noſe, is bruiſed againſt the *os pubis*, which does not give way like the *os coccygis*; and the child may be perhaps ſuffocated, by the flooding that follows delivery, which nevertheleſs can hardly poſſibly happen.

* In this caſe, when the head preſents, as has been ſuppoſed, there is no method of turning the child; becauſe the head affords no hold; labour muſt therefore be ſuffered to go on in this poſition. It is neceſſary only to paſs the hand, or at leaſt ſome fingers, well moiſtened with pomatum, againſt the *os coccygis*, to puſh it backwards, and facilitate the paſſage of the child's head; to be careful not to raiſe the child's head by this means, which, by preſſing its face againſt the *os pubis*, would bruiſe it ſtill more.

When the child's ſhoulders are paſſed, to turn it gently on its ſide, to keep its face from the flooding, which at this time begins to come on.

The means which have been propoſed are more difficult to put in practice with ſucceſs, when the womb is oblique itſelf. The precautions which this caſe requires will be ſeen hereafter †.

* Doctor Exton directs in this caſe, "If any part of the face lodges on the *pubis*, to diſengage it, by introducing a finger or two, between that and the bone, and, when the pain comes on, direct it from the *pubis*. If the labour is not like to ſucceed, then to lay the woman in a proper poſture, and deliver her, by turning the child, and extracting it by the feet;" contrary to the opinion of our author, who ſays, in this caſe, there is no method of turning the child. *R.* † Book iv. chap. 1.

CHAP. II.

Of labours in which the feet preſent; but in ſuch poſitions, as to render delivery difficult or impoſſible.

FOOTLING labour requires three circumſtances to be natural. 1ſt. For the feet to preſent in the ſame direction with the *vagina*. 2d. For both feet to preſent together. 3d. For the feet to be placed in ſuch a poſition, as to ſhew, that the child's face is turned downwards, that is to ſay, with its heels upwards, and its toes downwards; ſo that the want of one of theſe circumſtances is ſufficient to make a particular caſe, in which the labour is preternatural, and conſequently deſerves a ſeparate examination.

CASE I.

When the child's feet preſent obliquely to the mouth of the womb.

AS the child's feet never preſent, but when it has not been properly turned for birth, from the cauſes already ſhewn †, there is no reaſon to be ſurprized, if it frequently happens, that the feet do not preſent directly oppoſite to the mouth of the womb, even in caſe the womb is in a right direction, and much leſs in thoſe caſes in which it is oblique: it even happens ſometimes, that the child, by kicking, diſplaces its feet, which were properly ſituated, and afterwards fixes them againſt the ſides of the orifice.

From whatever cauſe this ariſes, it is neither difficult nor dangerous. When the mouth of the womb is ſufficiently dilated, to introduce the hand, and the membranes are ruptured, the feet are to be laid hold of, one after another, and the knees gently bent, to

† Book ii. chap. 2.

procure,

procure, by this means, an opportunity of bringing them directly into the paſſage with eaſe.

But if ſome difficulty is found, in endeavouring to bend the knees, the fingers are to be ſlid along the leg, as far as under the hams of each ſide; and then, by gently puſhing them, the joint of the thigh may be bent, and thereby, by ſhortening the length of the limb, the neceſſary liberty may be gained to diſengage the feet, and rectify that poſition.

At the worſt, the woman may be laid on her back, with her hips raiſed, to occaſion the womb to fall back into the cavity of the belly, and the child towards the bottom of the womb, which will afford all the convenience that can be deſired, to bend its legs or thighs, diſengage its feet, and place them in a proper poſition.

When the feet are once thus placed, and the midwife, aſſured by the methods already pointed out, book ii. chap. ii. that they belong to the ſame child, ſhe muſt keep them there, till a pain forces them into the paſſage; then, when ſhe can graſp hold of them, ſhe muſt endeavour to haſten delivery; becauſe the waters which drain off through the mouth of the womb, which the feet do not exactly cloſe, ſoon leave the child dry in the womb, and encreaſe the difficulty of delivery.

CASE II.

When one foot only, or a foot and a knee, preſent.

BOTH theſe, which frequently happen in this kind of labour, ariſe from the ſame cauſe as the preceding caſe. As ſoon as this is known, our attention ſhould be directed to prevent delivery going forward in this ſtate; becauſe, if one of the feet ſhould be engaged pretty far in the paſſage, it would be attended with great difficulty to bend and bring down the leg which is wanting, and which might run the riſque of being broke.

In

In theſe two caſes, the firſt thing to be done, is to place the woman on her back, with her hips raiſed, for the reaſons already frequently given.

2dly, If one foot preſents with the knee of the other leg, nothing more is neceſſary than to introduce the fingers, well moiſtened with pomatum, under the ham of the foot which is wanting, bend the thigh of it, and by paſſing the hand as far as the heel, lay hold thereof, bring it towards the mouth of the womb, and place it on the ſide of the other.

3dly, But if one foot only preſents, we ſhould immediately examine, whether it is the right or left foot, in order to judge certainly on which ſide it is moſt proper to ſearch for the other.

4thly, It is never difficult to find this foot; nothing more is required, than to bend the fingers, which have been introduced into the womb, and ſearch all round the ſide on which the foot ought to be, and it will be eaſily found.

However, in every caſe, if there ſhould be occaſion, the hand being firſt well moiſtened with pomatum, may be introduced all along the leg and thigh, which is got hold of by the other hand, as far as its union with the trunk of the body, and from thence to the other thigh; from whence, deſcending, the leg and foot which are wanting will be found.

5thly, When both feet are got hold of together, at the entrance of the mouth of the womb, or even in the paſſage, we muſt be aſſured, before we proceed farther, that they belong to the ſame child; and for this purpoſe, employ the means already ſhewn *.

6thly, But if unfortunately one of the child's legs is advanced as far in the paſſage as the top of the thigh, it muſt be abſolutely returned into the womb, by placing the woman on her back, with her hips raiſed, (as has been already often recommended) in order to find and bring down the leg and foot which are wanting, and put matters into ſuch a ſituation,

* Book ii. chap. 2.

as

as delivery may be accompliſhed. I am aware, that it is aſſerted, that children have come into the world in this poſition. If this happens, the thigh muſt be bent forward ſo far as to lie cloſe to the belly: but beſides, that one can never be ſure of this flexibility of the child's thigh, labour muſt in this caſe be very difficult, not to ſay impoſſible; and it is conſequently very imprudent to ſuffer ſuch a labour to proceed.

CASE III.

When the child preſents with its toes turned upwards, which denotes its face being turned the ſame way.

IT has been obſerved, in the preceding chapter, that when the child preſents with its face turned upwards, in natural labour, that it was obliged to be left in this ſituation, from the impoſſibility of returning it: happily this poſture happens but ſeldom in this kind of labour; and the worſt conſequences for the child are, its having its noſe cruſhed flat, and its face bruiſed. It is quite the contrary in footling labour: on the one hand, it is very common for children to have the face turned upwards; becauſe in this kind of labour, the child has never been regularly turned for birth; and, on the other hand, this poſture of the child is very troubleſome, becauſe it frequently happens that the chin is jammed againſt the *os pubis*, which hinders delivery, and ſometimes even occaſions the ſeparation of the head from the body; but luckily, it is eaſy in this kind of labour, to prevent this accident, by turning the child in time, after the following manner:

It ſhould be known early, whether the child has really its face turned upwards; and for this purpoſe, the poſition of its feet are to be examined: if the toes are turned upwards, and the heels downwards, it is a proof that the face is alſo turned upwards; and that, conſequently, we muſt think of changing the poſture of the child.

For

For this purpoſe, when the breech is paſſed, the right hand open is to be introduced againſt its back, and in proportion as the child advances, or is extracted by the other hand, we muſt endeavour to turn it. We ſucceed eaſily in living children, becauſe the body has a firmneſs; but it is more difficult in dead children, whoſe bodies have no elaſticity, eſpecially with reſpect to the head, which, on account of the flabbineſs of the neck, does not follow the motion endeavoured to be given it.

CHAP. III.

Of labours in which the child's hands, elbows, or ſhoulders preſent.

THIS kind of labour forms three different caſes, yet though very much alike, require, nevertheleſs, particular articles.

CASE I.

When the child's hands preſent.

THIS caſe happens when in turning for birth the child's head is hindered in the middle of its fall, and its hands, which are at liberty, are ſtretched out, and preſent towards the mouth of the womb; or after its having been properly turned for birth, from its diſplacing itſelf by toſſing about, or from being diſplaced by ſome diſtortion of the mother. In this caſe, the child preſents ſometimes one hand only, and ſometimes both together. This poſture is eaſily known when the membranes are ruptured, and as it is impoſſible for the child to be delivered in this poſition, it ought to be quickly remedied.

They endeavoured formerly to reduce this caſe to a natural labour by the head, and ſome ignorant midwives ſtill act upon this principle; but without

out amuſing ourſelves with a like trial, which can hardly ever ſucceed, we ſhould think of turning the child immediately, when the waters are drained off, and deliver it by the feet.

To do this, firſt the woman muſt be placed in a horizontal, or, which is more advantageous, even in a more reclining ſituation, with her hips raiſed.

2dly, Afterwards the womb is to be gently puſhed back from the *pelvis* into the belly, and at the ſame time the child returned back into the bottom of the womb, to give more room.

3dly, The child's thighs are to be ſought for, by paſſing the fingers gently over its body, and when found, they are to be bent a little forwards, to ſhorten the length of the child's body, and help to turn it the more eaſily.

4thly, The feet are to be laid hold of, and made uſe of to rectify the child's body, by bringing them towards the mouth of the womb, which makes the head riſe proportionably towards the bottom of the womb.

5thly, If at firſt one leg only is found, the other muſt be ſearched for, which cannot be far off, and muſt both be brought together, and by their aſſiſtance the child rectified.

6thly, and laſtly, The child is to be delivered by the feet, with the uſual precautions. See book II. chap. II. and book III. chap. II.—caſe I.

CASE II.

When the child's elbows preſent.

IN this caſe the child may preſent many different ways, either with one elbow only, with both elbows together, or with an elbow and an hand. Theſe different poſtures ariſe from the ſame cauſes which have been ſhewn in the preceding article, and require the ſame aſſiſtance.

The

The woman in labour muſt be placed in a proper ſituation, the womb returned into the cavity of the belly, and the child into the bottom of the womb. The midwife muſt introduce her hand along the elbow, quite up to the arm-pit, and by the aſſiſtance of this reſting-place, puſh the upper part of the child's body towards the bottom of the womb, which will bring both its feet towards the mouth of the womb, and afford the means of delivering by the feet, after the manner which has been explained in the foregoing chapters, and with the precautions therein recommended.

CASE III.

When the child's ſhoulders preſent.

THIS caſe always happens either through the child's turning too far for birth, which occaſions the head to paſs behind the orifice of the womb, and the ſhoulders to take its place, or for want of a ſufficient turn, which has diſcompoſed the order and oeconomy of its fall.

Sometimes the child preſents with one ſhoulder only, and ſometimes with both, or rather the ſpace between the ſhoulders. Sometimes alſo the child preſents with the ſhoulder and arm. But, on the whole, theſe caſes differ but little, and require the ſame aſſiſtance.

In all theſe caſes, the child muſt be returned, and delivered by the feet, according to the method which has been ſeveral times explained; and for this purpoſe the woman is to be placed in ſuch a ſituation as to have her hips elevated, to diſengage the womb from the *pelvis*, and the child from the neck of the womb. The child is to be returned into the bottom of the womb, by placing the hand againſt the arm-pit, and thereby raiſing up the ſhoulders and head, and by this means bringing the feet down towards the

the mouth of the womb, and when they are got there, proceed as in footling labour.

Some authors adviſe to find firſt one foot, and bring it to the mouth of the womb; they aſſert the other will follow, and that in proportion as they are brought towards the mouth of the womb, the head and ſhoulders will remove farther off, and riſe upwards towards the bottom of the womb; but they do not tell, (which is nevertheleſs very true) that by this means they run the riſque of breaking or diſlocating the legs or thighs of the child.

It is of great importance to remark, firſt, that in theſe three caſes, as well as in all the others, which I ſhall explain in the remainder of this book, that the midwife ſhould quickly determine what to do, as ſoon as the waters, begin to paſs off, becauſe the parts are not yet very ſtrongly rivetted in the paſſage; the womb has not yet had time to contract; and becauſe the inſide of the membranes is yet moiſt and glairy, and lets the child ſlip eaſily when ſhe attempts to return it.

2dly, Becauſe delivery becomes much more difficult by waiting, and this for three different reaſons, of which it is eaſy to make an application.

3dly, Becauſe it ſometimes happens, that by leaving an arm, a hand, or ſome other part hanging out of the womb, the part ſoon ſwells, which ſometimes makes it impoſſible to reduce it, or, at leaſt, renders the reduction thereof very difficult.

CHAP. IV.

Of those labours in which the child's knees or buttocks present.

CASE I.

When the child's knees present.

THE child may present with the knees in many different ways; but they depend nearly on the same causes, and require the same methods of relief.

Sometimes the child presents with both knees in the passage; this case happens generally when the child, in the room of presenting with its head, presents with its feet, from some one of the causes before taken notice of *, and the feet resting against the inside of the rim of the orifice, which, bending the joints of the knees, occasions their presenting.

The most certain method of remedying this, is to place the woman on her back, and raise the hips a little, to disengage the womb from the *pelvis*, and return the child into he womb, and by the assistance of the room gained thereby, lay hold of the legs, one after the other, push the knees upwards to bend the thighs, and take the advantage thereof to stretch out the two legs opposite the passage, and deliver the child by the feet, with the usual precautions.

Nevertheless, if the knees are too far advanced, they may be left in this situation, especially in women who have already had children, and in whom the mouth of the womb dilates easily. It is required only in this case to endeavour to facilitate delivery, by dilating the orifice, forcing backward the *os coccygis*, and lubricating the passage with fresh butter, or pomatum.

* Book II. chap. II.

Some-

Sometimes when one of the child's feet is ſtopped too far within the womb, the leg, and conſequently the knee, cannot reach ſo far as the mouth of the womb; whence it happens that the child cannot preſent the other knee, and therefore preſents one only.

To remedy this, after having placed the woman on her back, diſengaged the womb from the *pelvis*, and returned the child into the womb, the leg belonging to the knee which preſents is to be ſearched for, and having found it, the thigh is to be bent forward, until the knee is removed from the mouth of the womb, and the foot preſents; the leg is then to be ſtraightened, and thereby comes into the paſſage.

The ſame is to be done with reſpect to the other knee, which is eaſily found; it is bent forwards, until the foot approaches the orifice; the leg is then ſtraightened, and the child delivered by the feet.

Nevertheleſs, after having brought down the wanting foot, the labour might be ſuffered to proceed without unfolding the knee, which is in the paſſage, ſuppoſing it was ſtrongly compreſſed, or already tumified; but unleſs the woman has had ſeveral children before, or it was certain that the lips of the mouth of the womb are thin, ſupple, and eaſy to dilate, delivery, in this manner, is always difficult and laborious.

Laſtly, The child preſents ſometimes with a leg and a knee, when one foot paſſes eaſily into the paſſage, and the other foot is hindered, or kept back by the edge of the orifice, which makes the limb bend, and conſequently the knee preſent.

In this caſe, as well as the two preceding ones, the infant may be delivered in this poſture, when the leg and knee are very far advanced, or are already ſwelled, eſpecially when the woman in labour has already had ſeveral childen, or the lips of the mouth of the womb are ſupple and thin: nothing more is required than to aſſiſt delivery, by dilating the orifice with the fingers, moiſtening the paſſage well with pomatum, and forcing back the *oc coccygis*.

But the moſt certain method is always to replace the parts. To do this, after having placed the woman on her back, in the poſition already deſcribed, diſengaged the womb from the *pelvis*, and returned the child ſufficiently into the womb, to allow of moving the knee, it is to be brought forwards, until the foot preſents towards the paſſage, into which it is brought by ſtraightening the leg; after which the child is to be delivered by the feet.

In this kind of labour, as well as in all others of the ſame kind, the midwife muſt be careful, as has been already obſerved *, to aſſure herſelf that both feet belong to one child, and by turning the body of the child, to place the face downwards, if it was not ſo before.

CASE II.

When the child's buttocks preſent.

TWO cauſes may occaſion this ſituation of the child; the one when it turns for birth too quickly, ſo that the head paſſes beyond the mouth of the womb, and the breech places itſelf there; the other, when it is not turned for birth at all, and falling on its feet, a little beyond the mouth of the womb, it ſeems as it were to ſit upon the paſſage: frequently alſo this bad poſture of the child is to be attributed to its violent motions only.

When the buttocks preſent in this manner, it is difficult to diſtinguiſh this part from the head, while the membranes are whole; we can, however, very nearly perceive the difference between them, by this part being more ſoft, and divided into two buttocks, and alſo from its being leſs round.

As ſoon as it is certain that the breech preſents, the ſhorteſt and moſt certain way is, to rupture the membranes, diſcharge the waters, return the child back, and deliver it by the feet.

* Book II. chap. II.

For

For this purpoſe, the woman is to be placed as before directed, and after the womb is diſengaged from the *pelvis*, and the child puſhed back towards the bottom of the womb, the legs are then to be ſearched for, one after the other, and brought towards the orifice, and in proportion as they are brought there, the body and head of the child are put in the right way; ſo that nothing remains but to deliver by the feet, with the precautions already ſo repeatedly recommended.

Some people aſſert, that if the breech of the child is ſo ſtrongly riveted in the mouth of the womb and *pelvis*, that its reduction would be very difficult, a labour may be permitted to go on in this manner, and the child be delivered bent double, which appears to me always a very imprudent conduct. If this reſolution is taken, the midwife muſt, at leaſt however, endeavour to facilitate, as much as ſhe can, the delivery of the child, by aſſiſting the dilatation of the mouth of the womb, by plentifully moiſtening the paſſage with pomatum, by forcing back the *os coccygis*, and by paſſing the fingers, in the form of a hook, into the groin of the child, to help to extract it, taking a great deal of care not to hurt the *ſcrotum*, if it is a boy.

I think it neceſſary to inform the midwife, that ſhe ought not, in this caſe, to be alarmed at finding her hands ſmeared with a black fœtid matter, which flows from the womb, becauſe it is nothing elſe but the *meconium*, or excrement of the child, which the compreſſion of its belly occaſions it to void in this poſition.

CHAP. V.

Of labours in which the child preſents with its back.

THIS bad poſture happens, when in turning for birth the child's head paſſes beyond the mouth of the womb, and by that means the back places itſelf there; or when the child has not turned at all, but falls down on its back. Laſtly, this preternatural poſture may happen from ſome chance accident.

It is of great importance to know early that the child is thus ſituated, in order to remedy it quickly. It may be known from finding nothing at the mouth of the womb, but a bag full of water, in which, ſometimes, the navel-ſtring is felt, and from feeling the ſpine of the back, by advancing the finger forwards.

In this ſituation, it ſometimes happens that the navel-ſtring comes down, which encreaſes the danger, for the reaſons which will be hereafter given *. This coming down of the navel-ſtring is occaſioned by the poſture of the child, which lying croſsways in the womb, permits the navel-ſtring to ſlip down with the waters, by the ſide of its belly, and fall down as far as the orifice.

This bad poſture of the child muſt be remedied as quickly as poſſible, as well becauſe that otherways the womb in contracting embraces the child ſo cloſely, that it cannot be turned, as from the fear leſt the child ſhould be loſt through the compreſſion of its head and breaſt in this poſition; ſo that as ſoon as it is certain that the child preſents in this poſture, the membranes are to be ruptured, the waters diſcharged, the child turned, and delivered by the feet.

* Book IV. chap. III. caſe IV.

For

For this purpoſe, the hand, well moiſtened with pomatum, is to be introduced into the womb, after knowing, as well as poſſible, on which ſide the feet are, to make uſe of the hand which anſwers to that ſide.

The thighs and legs of the child are to be bent gently by the joints of the hips and knees, to ſhorten the length of the body and diſengage it from its tranſverſe poſition.

After it is diſengaged, the lower part of its body is to be brought towards the mouth of the womb, in order to bring back its feet there.

The child is always to be returned in ſuch a manner, that the back, which was downwards, may be uppermoſt, in order to extract the child, and, that by ſhortening its length, a little more play may be procured to bring its feet into the paſſage, and thereby procure delivery.

In which it cannot be too often recommended to be attentive to three eſſential points, which have already been often inculcated.

1ſt, To be aſſured, before we haſten delivery, that both feet belong to the ſame child.

2dly, To turn the child with its face downwards, in caſe it was otherways ſituated.

And laſtly, To perform theſe operations within the membranes of the child, which ſerve for a lining to defend the womb, as well as facilitate the motion of the child from their ſmoothneſs and lubricity.

CHAP. VI.

Of labours in which the child's belly preſents.

THE child takes this poſture when the head is ſtopt in turning for birth, and the body of the child is very long, and the womb very narrow.

This is the moſt dangerous poſture of all; firſt, becauſe the belly is ſtrongly compreſſed, and drawn into the paſſage, from which there is danger of an inflammation, or mortification, if it remains too long in this ſituation; ſecondly, becauſe the navel-ſtring, which comes down into the paſſage, ſwells and mortifies very ſoon; thirdly, becauſe the breaſt and head are extremely compreſſed; and in each of theſe caſes the child very ſoon periſhes.

This poſture may be known even before the waters are diſcharged; firſt, from the mouth of the womb's dilating very ſlowly; ſecondly, from the waters which form, being proportionably narrow and ſmall; thirdly, from finding nothing preſent at the mouth of the womb.

But it may be known more certainly as ſoon as the membranes are ruptured; firſt, by touching the navel-ſtring, which comes down into the mouth of the womb; ſecondly, by the ſoftneſs of the belly, when the fingers can be introduced far enough to reach it; for the inflexibility of the back bone does not permit the belly to apply itſelf againſt the orifice, at leaſt in the beginning.

This poſture renders delivery abſolutely impoſſible; there is no other means of procuring it, than by putting back the child, bringing its feet towards the mouth, and raiſing its head towards the bottom of the womb, and then delivering by the feet.

To do this, the means muſt be made uſe of which have been already frequently recommended.

1ſt, The woman muſt be placed on her back, in an horizontal poſture, with her hips a little higher than the reſt of her body. By the means of this poſition, to diſengage the womb from the *pelvis*, return it into the belly, and thereby gain a little play to diſengage the child, which is faſtened acroſs the paſſage.

2dly, Afterwards the hand is to be paſſed behind one of the thighs, in order to bend it towards the belly, and thereby bring the knee oppoſite the orifice.

3dly, The ſame muſt be done with the other thigh and the other knee, puſhing afterwards gently both knees beyond the edges of the orifice, until both feet are placed directly at the orifice.

4thly and laſtly, The child is then to be delivered by the feet, as it is certain that in proportion as the feet come forward into the paſſage, the child's body will get up again into the bottom of the womb, and every thing will be ready for delivery, which is to be executed with the uſual precautions.

I ſhall finiſh this account of preternatural labours, by adding two important reflections.

1ſt, That it is the midwife's duty to know, as ſoon as poſſible, the ſituation and poſture in which the child preſents.

She can have but very weak conjectures concerning this matter, while the mouth of the womb remains cloſed; ſhe has more certain tokens when the mouth of the womb is open, though the membranes are yet whole.

She has certain ſigns, when the membranes being ruptured, allow her to touch the parts; for the head or feet, hands, elbows, ſhoulders, knees, breech, back, or belly, are eaſily known.

2dly, She ſhould diſtinguiſh two periods in every labour, that which precedes the rupture of the membranes, and the diſcharge of the waters; and that which follows. In the firſt, there is no occaſion to

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be in a hurry, the midwife may wait patiently, unleſs the woman ſuffers very much, and the child ſtruggles a great deal, which ſhe is apprehenſive will weaken it too far, and eſpecially if ſhe does not feel ſome part preſent, which would be an obſtacle to delivery, if ſuffered to remain.

It is quite the contrary in the ſecond period, ſhe ſhould be expeditious when the waters are diſcharged, becauſe the womb, by contracting, compreſſes the child tightly more and more; becauſe the membranes growing dry, render the motion of the child difficult; laſtly, becauſe the paſſage and *vagina* becoming tumified, prove an obſtacle to the delivery of the child.

So that, without exaggeration, we may be aſſured that every hour's delay, after the diſcharge of the waters, increaſes the danger a third, even in labour where the head preſents, but eſpecially in a footling labour.

BOOK IV.

Of laborious, difficult, and tedious labours.

IN the moſt natural labours, with reſpect to the poſture of the child, there frequently happen difficulties or obſtacles, which render delivery laborious, difficult, and dangerous. But theſe difficulties are ſtill more frequent and troubleſome in preternatural labours: conſequently, difficult, laborious, and tedious labours, are a particular kind, which remain to be explained.

Theſe difficulties, or obſtacles, which render labour difficult, may ariſe from four heads: from the mother; from the child; from the after-birth; or from ſome chance accidents. I ſhall treat, in this book, of difficult labours which ariſe from theſe four cauſes, in four chapters; and, in each chapter, ſhall comprehend the different caſes which belong to each article.

CHAP. I.

Of difficult labours owing to the mother.

CASE I.

Of difficult labours, owing to the obliquities of the womb.

IN the labours which have been hitherto explained, the womb has always been ſuppoſed to have been ſituated in ſuch a manner, that its bottom and its orifice were in the ſame direction with the *vagina*; which is certainly the moſt natural and moſt advantageous poſition of the womb, for the delivery of the child, becauſe then its paſſage is entirely ſtraight forwards.

But this is not always the caſe. The womb is often met with oblique, with reſpect to the *vagina*. Sometimes it inclines backwards, towards the loins, and then its mouth is turned towards the *os pubis*. Some-

times

times it inclines forward, and then its mouth is turned towards the hollow of the *os ſacrum*. Sometimes it inclines towards the right or left ſide, and then its mouth is accordingly turned towards the bones of the *ilion* of the right or left ſide.

Though all theſe poſitions are poſſible, it is nevertheleſs certain, that the womb inclines more commonly forward or backward than ſideways; whether owing to the round ligaments which are fixed on each ſide, or rather becauſe towards its neck it is a little flattened before and behind, which hardly ever allows it to incline in any other direction.

The oblique poſition of the womb, to whatever ſide it is turned, proves an hindrance to delivery; becauſe the child, inſtead of being able to advance directly into the *vagina*, is ſtopped in its paſſage by the rim of the orifice againſt which it ſtrikes, which renders its own, as well as its mother's efforts, uſeleſs. But of theſe different poſitions, the moſt troubleſome is that in which the womb inclining forward, its mouth is turned towards the *os ſacrum*; in the hollow of which the head is fixed, and from whence it is difficult to be extracted.

I ſhall not repeat here the cauſes of theſe oblique poſitions of the womb, having already ſpoken of them *; nor ſhall I repeat again the ſigns, which ſerve to denote the obliquity of the womb, and the ſide to which it is inclined, having deſcribed them in the fifth chapter, book the firſt. I ſhall content myſelf, with briefly remarking, that when the womb is oblique, it is ſituated ſo high, that it is with great difficulty it can be reached, becauſe the mouth of the womb does not deſcend at all into the *vagina*, as it does when the womb is ſtraight; and one part only of the circumference of the neck of the womb, the anterior, poſterior, or lateral parts, according to the ſpecies of the womb's obliquity, can be then felt.

* Book ii. chap. ii.

In

In all theſe caſes, the womb is to be rectified, and brought as near as poſſible to a natural ſituation.

For this purpoſe, the woman muſt be laid on her back, with her hips raiſed higher than the reſt of her body, to allow of putting back the womb from the *pelvis* more eaſily; which may be done, by introducing the hand, well moiſtened with pomatum, and gently puſhing it upwards.

When a little play is procured by this means, the mouth of the womb is to be directed towards the *vagina*, with the ſame hand.

At the ſame time, preſſing gently on the outſide of the belly with the other hand, to rectify the poſition of the womb.

And then, waiting till the head of the child fixes itſelf in the paſſage, or at leaſt preſents there; after which, delivery is to be performed in the uſual manner.

But if this method does not ſucceed, and the womb returns to its former obliquity, ſo far as to render delivery very difficult, the child muſt in this caſe be turned without heſitation, in the manner that has been ſo often directed, and delivered by the feet, which remedies every thing; becauſe, when the feet are once got hold of, we are ſure by rectifying the child's body, to rectify the womb itſelf; and thus, the obliquity of the womb, which hinders delivery by the head, does not at all hinder delivery by the feet.

It muſt be obſerved, that the obliquity of the child in the womb, which is mentioned by ſome authors, may be complicated with an obliquity of the womb itſelf, in two different ways. In one, the obliquity of the child is in a contrary direction to the obliquity of the womb; and, in this caſe, the obliquity of the child corrects that of the womb: but this caſe is rare, ſuppoſing it even poſſible. In the other, the obliquity of the child is in the ſame direction with the obliquity of the womb, and then the delivery of the child is ſo much the more difficult; and, conſequently,

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the neceſſity of turning the child, and delivering by the feet, more preſſing.

CASE II.

Of the difficulty which proceeds from the weakneſs and want of elaſticity of the womb.

THE muſcular contraction of the womb is the principal cauſe which puſhes the infant forward, and procures delivery. If this contraction is performed but weakly, a long and difficult labour is to be expected; and this happens in two caſes:

1ſt, When the womb is furniſhed with but few muſcular fibres, and thoſe fibres thin, weak, ſmall, and incapable of exciting a ſtrong contraction; and this is a defect in the conformation of the part.

2dly, When theſe fibres, though naturally ſufficiently numerous and ſtrong, are relaxed by the ſeroſity, which has ſtagnated during pregnancy, between the *chorion* and womb, and cauſed a dropſy of the womb. This fluid diſcharges itſelf from the beginning of labour, as ſoon as the mouth of the womb begins to dilate: but the womb, nevertheleſs, remains in a ſoft, inelaſtic ſtate, which greatly weakens its contraction.

Happily, in both theſe caſes, the mouth of the womb partakes of the defects of the womb itſelf; through which, being more ſoft and lax than natural, it more eaſily gives way to the paſſage of the child; and thereby that which was loſt by the relaxation of the womb, is in ſome meaſure regained.

The midwife eaſily knows this ſtate of the womb, by the ſlackneſs and weakneſs of the pains; and ſhould endeavour to remedy it, by encouraging the woman in labour, and promiſing her a ſpeedy and eaſy delivery; by giving her a little orange-flower-water, or a little burnt wine; by making her take ſnuff, in order to occaſion ſneezing; or adminiſtring a ſtimulating

ing clyſter; and laſtly, if neceſſary, by giving from two, to ſix grains, of emetic tartar.

With reſpect to the method of delivery, if the child preſents with its head, ſhe is to deliver it in that manner, and facilitate its exit, by dilating the orifice by degrees, which will ſcarcely afford any reſiſtance to dilatation. If the child does not preſent at all, for want of being preſſed forward by the womb; or, if it preſents in any other poſture, ſhe muſt determine to deliver by the feet, making uſe of all thoſe precautions which I have already ſo repeatedly recommended: for this inactivity of the womb generally encreaſes, and renders delivery more difficult each ſucceeding minute, when time is loſt by heſitating in what manner to act.

CASE III.

Of difficult labour which proceeds from the mouth of the womb.

THE mouth of the womb is the narroweſt part through which the child paſſes; and is alſo the place which occaſions the greateſt ſufferings of a woman in labour. As delivery is eaſy when this orifice is open, or eaſy to be dilated, ſo, on the contrary, it is difficult and laborious in the three following caſes. When the circumference of the mouth of the womb is hard, compact, and thick, without theſe faults exceeding the bounds of nature; ſuch is generally the ſtate of this orifice in women, who marry far advanced in years, who have always longer and more difficult labours than young women.

When there is in ſome part of this circumference a bridle or *cicatrix*, in conſequence of ſome chop, laceration, or excoriation, occaſioned by a preceding labour, which hinders the uniform extenſion thereof.

When there is a callosity or schirrus in some part of this circumference, proceeding from a former difficult labour, or produced by a pocky leaven, in which case the mouth of the womb cannot easily dilate any more than in the preceding case.

A skilful midwife ought to have known these disorders by touching the woman * before labour; and consequently should have endeavoured to remedy, or, at least, to lessen them by the use of emollient fomentations of the belly, and by injections of the same kind, after having placed the woman with child in a posture proper to keep them in the *vagina* for some time; by pessaries composed of the pulp of emollient plants, by the steams of a warm decoction of emollient plants, by unctions of fresh butter, or goose-grease, frequently repeated, which means she should make use of for several days before delivery.

When the woman is in labour, the midwive should endeavour to know as soon as possible the situation in which the child presents. If with the head, she must suffer delivery to go forward, taking care to promote it, by dilating the orifice gently as much as she can, and moistening it well with fresh butter or pomatum.

If, on the contrary, the child's feet present, she will take the advantage of this posture for delivery; and, if the child should present in another position, must endeavour to bring it to this, using all those precautions which have been already so frequently inculcated, both in respect to turning the child, and extracting it gently, and by degrees.

The same means are to be made use of, and the same precautions, in delivering a woman who has a stone in the bladder; or the piles, very much swelled; or a tumour in the gut *rectum*, which require the *vagina* to be thoroughly relaxed, and the delivery of the child not to be pressed too forward.

* See book i. chap. iv.

CASE

CASE IV.

Of the difficulty which proceeds from the vagina.

THE diſorders of the *vagina* may hinder delivery in two caſes, both of which are rare.

1ſt, When the membrane, known by the name of the *hymen*, which cloſes the orifice of the *vagina* croſſ-ways, leaving a canal in the middle for the paſſage of the monthly-courſes, is found thick and denſe enough, and has been ſufficiently preſerved, to prove an obſtacle to the delivery of the child. This caſe is rare; but a more rare caſe is, that, notwithſtanding the intireneſs of the *hymen*, conception has been effected by the opening only which was in the middle of this membrane. Nevertheleſs, both the one and the other are real facts, and obſervations furniſh ſome examples of them.

This diſorder is eaſily known *; and, when known, is eaſily remedied, by making an inciſion lengthways through this membrane; or, for greater certainty, two crucial inciſions, and placing therein a peſſary of linen, rolled up, ſpread with yellow baſilicon, to hinder the fragments from uniting, and oblige them to turn towards the ſides of the *vagina*, where they form the *caruncul æ myrtiformes*.

The ſecond is much more troubleſome, if through the length of the *vagina* the oppoſite ſides are ſo cloſely united together that there are no hopes of ſeparating them, and leave only a ſmall paſſage through which the monthly courſes paſs, and conception is effected. This accident is always the conſequence of a bad conformation, or of ſome wound, ulceration, or excoriation of this part, which has been very neglectfully treated.

An example of this kind is to be met with in the Hiſtory of the Academy of Sciences of the year 1712, p. 37, and 38, which preſents at the ſame

* See book I. chap. iv.

time the assistance of nature as the only resource. "A woman, who was married at about sixteen years of age, had the *vagina* so narrow, that a goose-quill could hardly be introduced, and was not closed by any extraordinary membrane as sometimes happens. Besides, she was tormented by a young and vigorous husband, who was in hopes always of making a passage, but did not succeed. She was very desirous of finding a remedy for her case, but could not meet with any. At length, about the end of the eleventh year, she became pregnant, without the husband's having made any farther progress than the first day. The surgeon, from whom we are favoured with this observation, was thoroughly persuaded she could never be delivered. Notwithstanding, towards the fifth month, the *vagina* began to dilate, and continued to do so, until at length it became of the natural common size, and the woman was happily delivered!" The surgeon was of opinion, and with great probability, "That in proportion as the womb extended by the growth of the infant, the *vagina*, which is a continuation of it, extended also; and that the same cause, namely, a greater afflux of blood, produced both effects at the same time."

A like observation is related in the history of the same academy for the year 1748, "Of a woman at Brest, in whom the *vagina* was so narrow as scarcely to admit a quill, who nevertheless became pregnant, and was happily delivered, after three hours labour, of a strong healthy child." Another observation of this kind is to be met with in *Riolan*'s Anthropographia, book II. chap. xxxv. and examples of this sort are common enough amongst authors.

CASE V.

Of the difficulty which proceeds from the PELVIS, *or bason.*

THE *ossa inominata* and the *os sacrum*, by their union, form a cavity called the *pelvis*, or bason, which has

has been deſcribed in the firſt chapter of the firſt book. In this cavity the womb is contained in women who are not pregnant; but in pregnancy the body of the womb riſes upwards; and after the third or fourth month, only its neck and orifice remain there. It is through this cavity that the child muſt paſs in labour, which requires our examining the ſtate thereof attentively, and our being well acquainted with the difficulties which are to be met with in its paſſage.

Anatomy points out two; one at the beginning of the *pelvis*, between the ſuperior part of the *os ſacrum*, which projects forwards and inwards, and the bones of the *pubes*; which may be called the ſuperior *ſtrait*. The other at the bottom of the *pelvis*, between the *os coccygis*, the point of the *os ſacrum*, and the tuberoſities of the *os iſchion*, which may be called the inferior *ſtrait*. In a natural ſtate, theſe *ſtraits*, though real, are no obſtacle to the paſſage of the child; but they become ſo in the following caſes:

When the bones of the *pelvis*, though well formed, are too ſmall, and thereby occaſion a very narrow paſſage.

When from the bad conformation of theſe bones, though otherways ſufficiently large, the paſſage thro' them is irregularly ſtraitened.

The firſt caſe ſeldom happens, even in very young, and very little women; and it is ſtill more ſeldom that it occaſions any conſiderable difficulty in delivery, when the child, and eſpecially its head, is of a natural ſize: however, if this ſhould happen, the ſame method muſt be made uſe of in this caſe, as when the cavity of the *pelvis*, being of a natural ſize, the child's head is too large, which will be treated of in the next chapter.

The ſecond caſe requires a longer account, and deſerves more attention, according as the vicious conformation of the bones of the *pelvis* contracts the ſuperior or inferior ſtrait.

The ſuperior ſtrait is preternaturally contracted, through the bad conformation of the bones, when the ſuperior convexity of the *os ſacrum* projects too far into the *pelvis*; and at the ſame time the bones of the *pubes*, inſtead of being convex outwardly, are flattened, and even bent inwards. In this caſe, the paſſage between the *os ſacrum*, and the bones of the *pubes* is ſo narrow, that the child cannot paſs without great difficulty, and even ſometimes cannot paſs at all.

The narrowneſs of the inferior ſtrait happens in the like circumſtances, when the point of the *os ſacrum* is too long, and too much bent inwards; when the *os coccygis* is too long, too much bent, and too rigid; and when the tuberoſities of the *oſſa iſchion* are too long, too thick, and too much bent inwards, which leaves between theſe different bones but a very narrow paſſage.

This bad conformation of the bones of the *pelvis*, is the conſequence of rickety diſorders which theſe women have laboured under in their infancy, and are met with only in bad ſhaped, lame, crooked, deformed women, who ought to remain in a ſingle ſtate, if they had common ſenſe; but have a greater deſire to be married, and have children, than thoſe of a better ſhape.

In the narrowneſs of the ſuperior ſtrait, it would be right to be acquainted with it before hand, by touching, as has been deſcribed in the firſt chapter, book I. But, at leaſt, it ſhould be known at the beginning of labour, to be able to form a judgment, with ſome degree of certainty, of the ſtate of the parts, and the danger of the labour; and to be juſtified beforehand, with regard to the bad ſucceſs which there is reaſon to apprehend; but, above all, to judge whether the paſſage is large enough to attempt delivery, or abſolutely impoſſible for the child to paſs: in which caſe, there remains no other reſource than the *Cæſarean* operation, which will be deſcribed in the ſixth chapter of the fifth book.

It is not even ſufficient, in this unhappy caſe, to have room enough for the child to paſs; but it ought to preſent with its head, for it cannot be aſſiſted. Beſides, a great deal of dexterity is required to accompliſh this delivery; for before the head is lodged in the paſſage, the face, which preſents downwards, ſhould be turned ſideways, which facilitates its paſſage; becauſe the head is narrower from ear to ear, than from the back of the head to the face: for the ſame reaſon, when the head is paſſed, the ſhoulders are to be placed ſideways, with the back towards the *os pubis*, to accommodate them to the paſſage; but if the head or ſhoulders are lodged in the ſtrait, and cannot be diſengaged, the crooked forceps of Mr. Levret muſt be had recourſe to, which have ſometimes ſucceeded in this caſe; and if this expedient fails, the cruel reſolution muſt be taken of diſmembring the child, to extract it piece-meal, which ſuggeſtion alone, I believe, will determine women not to undertake this kind of labour.

The difficulty ariſing from the child's being lodged in the inferior ſtrait is leſs troubleſome; to ſucceed in this caſe; the *os coccygis* muſt be thruſt back, outwardly, the paſſage well moiſtened with pomatum, and whatever ſtops the child, muſt be dexterouſly removed. A finger moiſtened with pomatum muſt be introduced under the arm-pit, to ſerve as a crotchet. The woman muſt be made to cough, ſneeze, and vomit; and if theſe trials are uſeleſs, the crooked forceps of Mr. Levret muſt be uſed, which, in this caſe, may be made uſe of with more eaſe, and greater ſucceſs, than in the preceding.

I muſt not omit mentioning, that there are two reſources in this kind of labour, though very uncertain, and often inſufficient. The one, that the bones of the *pubes*, and even the *oſſa inominata* ſeparate a little from each other, which renders the cavity of the *pelvis* a little larger: but this happens only in young perſons, in whom the articulations of the bones are yet

lax, and the cartilages ſoft; though this does not often happen. The other, that the head of the child, which is the biggeſt part of the body, and, conſequently, that which has moſt difficulty to paſs, moulds, and accommodates itſelf to the paſſage. As in children, the ſutures of the head are membranous, the bones of the head flexible, and their articulations looſe, the efforts of the child occaſion the head to take that form which beſt ſuits the ſhape of the paſſage; if it is round, but narrow, the head is lengthened in the ſhape of a cone; if narrow and flattened, the head is flattened alſo.

As in this caſe, the child's head muſt be ſtrongly compreſſed to mould itſelf into the paſſage, and it cannot be ſo, unleſs the child preſents with the head, and can bear itſelf with its legs ſtrongly againſt the bottom of the womb, it is plain we cannot expect any ſucceſs, except the child preſents in this poſture; but if unfortunately the feet preſent, it is almoſt certain it can never be delivered; or if it is delivered, the head will be left behind.

If fortunately the child is delivered alive in a labour of this kind, the firſt care muſt be to baptiſe it immediately: after which, the head is to be moulded into its proper ſhape; and if there appear any bruiſes on the body, they muſt be bathed with oil of ſweet almonds, beat up with a little warm red wine.

CASE VI.

Of the difficulty which proceeds from the os coccygis *in particular.*

THE *os coccygis*, which, as has been ſeen in the firſt chapter of the firſt book, terminates the point of the *os ſacrum*, to which it is connected, is naturally curved towards its baſis, and ſtraitens the circumference of the paſſage of the *pelvis*, without hindering delivery in its natural ſtate: whether from its

not being long enough to diminiſh the circumference of the paſſage much, or whether that from its flexibility, it eaſily gives way to the impulſe of the child, which, in paſſing, forces it backwards. But as has juſt been obſerved, it becomes a remarkable obſtacle in two caſes, the firſt, when it is longer than common; that is to ſay, compoſed of five bones together, in the room of four, which happens in ſome perſons. The other, when it is hard and inflexible, which is the caſe in old women, from the oſſification of the cartilages which unite together theſe bones, and the induration of the ligament which ſurrounds them.

As ſoon as the midwife finds out this obſtacle, which is eaſily known, ſhe muſt take care to force the *os coccygis* outwardly, by introducing a finger into the *anus*, and enlarging the paſſage. Sometimes, as the *os coccygis* is not flexible, one of the bones is diſplaced, or diſlocated; but this ſignifies nothing; after delivery it is eaſily put put in its place again; and this momentary diſlocation is attended with no bad conſequence.

CHAP. II.

Of tedious and difficult labour, owing to the child.

THE child may itſelf be an hindrance to its delivery, and render labour difficult, and it effectually prevents it in the following caſes.

CASE I.

Of the difficulty which proceeds from the child's head being too large.

CHILDREN are not all of the ſame ſize; and it is plain, that the delivery of thoſe which are the largeſt muſt be the moſt difficult: but the difference in the ſize of children, with reſpect to the reſt of their body, is never very conſiderable, nor increaſes much the difficulty of delivery. This matter depends then only on ſize of the head and ſhoulders, which being naturally the largeſt parts of the child's body, are ſometimes of an extraordinary ſize, and in this caſe render delivery very difficult.

This extraordinary ſize of the child's head and ſhoulders may be ſometimes owing to a bad conformation of the parts; but, in general, is the conſequence of the reſemblance of the child to its father, who has alſo a large head and broad ſhoulders.

On mature conſideration, this caſe is in fact the ſame as that in which the *pelvis* is too ſmall, which has been deſcribed in the fifth caſe of the laſt chapter; for as it is neceſſary for the delivery of the child, that the head of the child, and the cavity of the *pelvis* have ſome proportion to each other, the difficulty is the ſame, whether the cavity of the *pelvis* is too ſmall, and the child's head and ſhoulders of a natural ſize; or whether they are too large, and the cavity of the *pelvis* of a natural ſize.

Hence it reſults, that when the child is too large, it is advantageous for two reaſons, that it preſents with the head rather than the feet, as well as when the

cavity

cavity of the *pelvis* is too ſmall: 1ſt, becauſe, when the head preſents, the greateſt part of the waters remain in the membranes, which prevents the child's growing dry, and being too ſtrongly compreſſed by the womb: while in footling labour both theſe inconveniencies happen from the total diſcharge of the waters. 2dly, When the head preſents, the child, preſſed forward by the contraction of the womb, acts ſtrongly againſt the mouth of the womb, to make itſelf a paſſage, by dilating it; or, at leaſt, by moulding its head conformably to the paſſage; in which it often ſucceeds, while both theſe aſſiſtances are wanting in footling labour, as has been remarked in the preceding chapter.

Thus, if the child preſents with its head, as is generally the caſe in this ſituation, the midwife muſt begin, by exhorting the woman to have courage and patience, promiſing her an happy iſſue.

She muſt alſo aſſiſt delivery by gently dilating the mouth of the womb, moiſtening it with freſh butter or pomatum, forcing back the *os coccygis*, and giving her ſome weak broth or mild cordial, and taking care to make her void her urine frequently, if the labour is tedious.

She muſt, when ſhe judges it neceſſary, increaſe the efforts of the womb and child, by making the woman in labour ſneeze ſtrongly or vomit, by giving her ſternutatories or emetics, or endeavouring to procure ſtrong throes by ſtimulating clyſters. Laſtly, If ſhe ſees the head ready to free itſelf, ſhe ſhould be careful to take the advantage of a ſtrong pain, to bring the ſhoulders in its place, without delay; and, if ſhe ſucceeds, may look upon delivery as accompliſhed.

But if the child preſents with its feet, or its bad poſture in the womb obliges it to be brought to this poſition, delivery muſt be haſtened; becauſe, from the diſcharge of the waters, the child becomes dry, and delays are prejudicial. This kind of labour advances without any trouble as far as the breech; but

then,

then, ſuppoſing the child's face turned forwards, as it generally is in this poſition, it muſt be turned, to prevent the chin's ſticking againſt the bones of the *pubes*. This done, continue to extract the child gently, until its ſhoulders come into the paſſage; and, ſuppoſing that they paſs, act ſo, that the head may immediately ſupply their place, and reap the advantage of the dilatation which they have cauſed. It is by this means only, that this kind of delivery can ſucceed; but it is ſeldom that the ſize of the head, which keeps its rotundity, does not prove an obſtacle frequently unſurmountable.

CASE II.

Of the difficulty which proceeds from a dropſical child.

THERE is only the dropſy of the head, or *hydrocephalus*, and the dropſy of the belly, or *aſcites*, which can hinder delivery: the one, by enlarging the head; the other, the belly. With reſpect to the dropſy of the breaſt, ſuppoſing that it does happen to children in their mother's womb, as it does not ſwell the breaſt, it is not to be reckoned among the cauſes of difficult labours.

Theſe dropſies happen to children in their mother's womb, as well as to children which are come into the world; and examples of them are not unfrequent. They ariſe from the ſame cauſes, which I ſhall not attempt to examine; becauſe I do not propoſe to treat here of the means of remedying this diſorder, but of the difficulty which it produces in labour.

The principal attention of the midwife ought to conſiſt in being aſſured of the reality of theſe dropſies; for ſhe ſhould forbear employing the methods they require, except ſhe is forced thereto, by the certainty of their exiſtence, and the known inefficacy of every other reſource.

When

When the membranes are ruptured, and the child preſents, the dropſy of the head may be known, by the head's being flat, and of much greater extent than uſual; by the ſutures, eſpecially the *ſagittal* ſuture, being much farther aſunder than in common, and the fontanel being extremely wide; and from the ſpace between the ſutures, and eſpecially the fontanel, being very ſoft and very lax.

In the like circumſtances, a dropſy of the belly may be known, from the child's (the head and ſhoulders being paſſed) remaining ſtopped in the paſſage by its belly, and by introducing the hand, moiſtened with pomatum, into the womb, along the breaſt of the child, as far as the pit of its ſtomach, and thereby feeling the ſize of its belly.

In both theſe caſes, our firſt attention ſhould be to procure delivery in the common way, which often ſucceeds, when theſe dropſies are not conſiderable, or the mouth of the womb dilates ſufficiently. In this caſe, all thoſe reſources are to be patiently made uſe of, which have juſt been propoſed, for the delivery of children who have too large heads.

But if theſe reſources are uſeleſs, and the woman is ready to ſink under the violence and length of the labour, the water of theſe dropſies muſt be evacuated by violent means, attended with certain danger to the child; but the obligation we are under to ſave the mother, juſtifies the cruel neceſſity we are under, eſpecially as we cannot entertain any hopes of the life of a child, attacked in its mother's womb, with a diſorder always almoſt mortal.

Thus, in the *hydrocephalus*, the left hand is to be introduced into the womb, as far as the fontanel, being firſt well moiſtened with pomatum.

Then introduce along the left hand, a *trocar*, of a proper length, the point of which ſhould be armed with a button of wax, to prevent its wounding any part in its introduction.

Then

Then conduct, with the left hand, the point of the *trocar* to the fontanel, into which it is to be plunged; then extract the *trocar*, and leave the *canula* in the wound, to evacuate the water.

By this means the head flattens, and paſſes eaſily, and the reſt of the body follows, without difficulty; for in this caſe, the child is emaciated.

In like manner in the dropſy *aſcites*, the fingers of the left hand, moiſtened with pomatum, are to be introduced along the breaſt of the child, as far as the pit of its ſtomach.

With the other hand, a long *trocar*, the point of which ſhould be armed with a wax button, is paſſed between the child's body and the fingers, as far as its belly.

The fingers, which are introduced into the womb, are made uſe of to direct the point of the *trocar*, which is afterwards plunged into the belly; and by extracting the *trocar*, and leaving the *canula* behind, the water is evacuated; after which, delivery is effected, without any farther aſſiſtance.

CASE III.

Of the difficulty which ariſes from monſters.

THE generation of monſters is a myſtery of nature, which the curioſity of philoſophers has never yet been able to diſcover; and, in my opinion, never will. They diſpute, whether monſters happen from the union of two germs, or whether they were originally thus formed.

The firſt of theſe ſuppoſitions ſtaggers under the weight of the objections raiſed againſt it; and, in the other, they preſume to aſk, what reaſons the Author of Nature could have to form them? And as they do not comprehend them, almoſt carry their raſhneſs ſo far, as to find fault with them.

I do

I do not chuſe to engage in ſuch obſcure queſtions, becauſe I cannot flatter myſelf with being able to reſolve them; and I am of opinion, that vain ſpeculations are not of the leaſt uſe in the art of midwifry, which is the ſubject to be here treated of. It is ſufficient to obſerve, that there are in general two kinds of monſters: the one, in which there is a defect of ſome parts that are wanting *from defect*; and the other, in which there is a ſuperfluity of ſome members. This ſpecies may be ſaid to ariſe *from exceſs*. The firſt kind of monſters prove no hindrance to delivery; but it is not ſo with the other, as muſt be eaſily conceived.

Nevertheleſs, among theſe kind of monſters, ſome prove greater obſtacles to delivery than others. A child, for example, with two heads, would occaſion greater difficulty than a child with three arms; and a child with three arms would occaſion greater difficulties than one with three ears, or ſix fingers.

It is often difficult to know whether the child is a monſter: nevertheleſs, by an attentive conſideration and ſtrict examination, one may be enabled to form a judgement, after having ruptured the membranes, whether the child, which is now handled naked, has any conſiderable defect. Thus it may be obſerved, whether it has two heads, if the head preſents; or if it has four legs, when the feet preſent.

When we are aſſured of the poſition of the child, all poſſible means are to be made uſe of to procure its delivery, however monſtrous it may be: and for this purpoſe, thoſe methods which have been recommended in difficult labours, viz. to lubricate and dilate the mouth of the womb; force backward and forward the *os coccygis*; to uſe fomentations, clyſters, ſternutatories, and emetics. But when all theſe means fail, and the mother is exhauſted; in this cruel neceſſity, to ſave her, the child muſt be diſmembered in the womb. But I do not think midwives courageous or ſkilful enough to perform an operation of this kind;

kind; and therefore adviſe them to ſend for a man-midwife.

CASE IV.

Of the difficulty which proceeds from twins.

TWINS have each their ſeparate after-birth, each a diſtinct *placenta*, and are contained in ſeparate membranes; therefore can have no communication with each other, until their membranes are ruptured, which very ſeldom happens in the womb at the beginning of labour, and never happens in the part by which they touch each other, becauſe they are ſtrongeſt in this part, from their junction. In a word, twins are like two pregnancies, entirely diſtinct.

A woman may be ſuſpected to have twins during the laſt months, when her belly is very large and cumberſome, and appears as if ſeparated into two, by an intermediate line, and ſhe feels two different motions in her belly, and in different places; but there is no certainty of the exiſtence of twins, till in labour, the mouth of the womb is ſufficiently opened, to admit of introducing a finger, with which the two children may be diſtinguiſhed.

Twins hinder delivery for two reaſons. 1ſt, Becauſe they naturally hinder each other from turning regularly for birth, which occaſions one of them to be almoſt always in a bad ſituation, and even ſometimes both; 2dly, becauſe they ſometimes preſent both together, or at leaſt preſent ſome of their members, as a leg or an arm, which hinders the delivery of the other that preſents properly.

As ſoon as it is known that there are twins, the midwife ſhould begin, by delivering the child which is next the paſſage. If its head preſents with the face turned downwards, (as happens when it has been properly turned for birth) it muſt be delivered in this manner, making uſe of the neceſſary precautions,

and

and giving all the aſſiſtance poſſible to the woman in labour. If the *placenta* comes away with the child, the navel-ſtring is to be divided, after having made a ligature upon it, at about the diſtance of an inch from the navel, and the child given to the nurſe, while the midwife attempts the delivery of the other; but if the *placenta* adheres to the womb, as it generally does, inſtead of endeavouring to detach it, which would occaſion a conſiderable loſs of blood, a double ligature is to be made on the navel-ſtring; one near the child's navel, and the other at about four fingers breadth diſtance; after which, it is to be cut through between the two ligatures, the child delivered to the nurſe; and the extraction of the *placenta* deferred, till the other child is delivered, which the midwife muſt ſet about without loſs of time.

If the firſt child preſents with its feet, or in ſome bad poſture, which obliges it to be brought into this poſition, then delivery is to be performed in this manner, taking a great deal of care that both feet belong to the ſame child; and remembering, when the child is delivered as far as its breech, to turn it, in order to place its face downwards. Generally both after-births come away with the laſt child, and labour is then at an end. However, at all events, after having made a double ligature on the navel-ſtring, divided it between them, and delivered the child to the nurſe, the midwife muſt endeavour to ſeparate the double *placenta*, which adheres to the womb, by the methods which will be ſhewn in the following chapter, caſe the ſecond.

CHAP.

CHAP. III.

Of tedious and difficult labours, proceeding from the after-birth.

THE after-birth comprehends the *placenta*, navel-ſtring, and membranes: as each of theſe parts may hinder delivery, there proceeds from hence a variety of different caſes.

CASE I.

Of the difficulty which proceeds from the placenta *preſenting before the child.*

THE *placenta* adheres to the womb during labour, which is an advantage; becauſe, by this means, delivery is accompliſhed without much loſs of blood: but towards the end, the kickings of the child, contractions of the womb, and dragging of the navel-ſtring, which the child pulls after it in delivery, ſeparate it, and it generally comes away with the child; but this order is inverted on two occaſions: ſometimes the *placenta* is ſeparated as ſoon as the child, and even falls before it into the mouth of the womb, which is the preſent caſe. At other times, the *placenta* adheres to the womb after the child is delivered, which is the next caſe I ſhall ſpeak of.

The *placenta* happens to be ſeparated too ſoon, in two caſes: 1ſt, when the navel-ſtring is too ſhort, or, which is the ſame thing, when it is twiſted round the child, or ſome of its limbs: in this caſe, the child, in turning for birth, draws the navel-ſtring ſtrongly, and the navel ſtring ſeparates the *placenta*. 2dly, When the woman, towards the end of her time, meets with ſome accident, ſuch as a fall, or a violent blow. In both theſe caſes, this accident generally happens to women in whom the womb is thin, relaxed,

laxed, weak, and glairy, which occaſions the *placenta* not to adhere ſo ſtrongly as it ought to do.

When the *placenta* ſeparates too ſoon, two troubleſome conſequences happen; the one is a plentiful hemorrhage during delivery, which puts the woman in danger of her life. This hemorrhage proceeds from the venal appendages, which, being ſeparated from the *placenta*, pour their blood in a full ſtream into the womb. The other is, that the *placenta*, falling directly on the mouth of the womb, abates, by its ſoftneſs, the efforts of the child's head, and renders delivery the more tedious.

The woman muſt therefore be delivered as quickly as poſſible, ſince ſhe is in danger in this ſituation; for which reaſon, if the mouth of the womb is ſufficiently dilated; or, if it is not, after having ſufficiently dilated it, the body which preſents is to be examined, and will be known to be the *placenta*, from its feeling ſoft and ſpongy. The midwife muſt endeavour to place it to the right or left ſide, to get at the membranes, which ſhe muſt tear with her nails, to diſcharge the waters; but if this is attended with too much difficulty, ſhe muſt tear the *placenta* itſelf, and afterwards rupture the membranes which are under it, to give a free iſſue to the waters.

When the waters are diſcharged, the hemorrhage will leſſen almoſt one half, becauſe the womb will then contract; and, by contracting itſelf, will, in proportion, cloſe the orifices of the venal appendages, which occaſion the loſs of blood: nevertheleſs, ſhe muſt continue to make haſte; and having diſcovered the ſituation of the child, by the rupture of the membranes, deliver it by the head without delay, if the head preſents; or by the feet, if the feet preſent, or its bad poſition in the womb makes it neceſſary to bring it to this ſituation; obſerving, in both caſes, all the precautions which have been ſo often recommended, and are proper for every kind of this labour.

The infant once delivered, the womb contracts,

the hemorrhage leſſens, and at length ceaſes; and nothing farther is required, than to keep the lying-in woman quiet, and confine her to ſpoon-meats, to prevent a fever.

I ſhall add but one reflection more, which is, if the *placenta* has already freed the paſſage, and is fell into the *vagina*, the membranes ſhould immediately be ruptured, to diſcharge the waters, and the *placenta* returned into the womb, by placing the woman in a ſupine poſture, and afterwards the child delivered ſeparately from its membranes; though it has ſometimes happened, even in this caſe, that the child has been delivered with its membranes whole.

CASE II.

Of the difficulty which proceeds from the adheſion of the placenta *to the womb, inſtead of coming away with the child.*

THE *placenta* adheres to the womb after the birth of the child from two cauſes; the firſt from the thickneſs and ſpongineſs of the womb, which occaſion its inſinuating itſelf intimately into the ſinuoſities of the *placenta*, and embracing ſtrictly its eminencies, which penetrate into its ſubſtance; the other from the *placenta*'s being larger than ordinary, and of a more ſpongy ſubſtance; whence its adheres more ſtrongly to the womb, and by a greater ſurface.

When difficulty is met with, in endeavouring to extract the *placenta*, after the delivery of the child, two ligatures are to be made on the navel-ſtring, one at the diſtance of two or three inches from the navel, the other three or four inches higher, and, after dividing it between the two ligatures, the child is to be delivered to an aſſiſtant.

The midwife is then to take hold of the navel-ſtring with her left hand, after having wrapt it in a dry ſoft cloth, to hinder its ſlipping. In this poſition, ſhe muſt take care not to pull the cord directly towards her, which would be the means of procuring an inverſion

of

of the womb, but muſt introduce along the navel-ſtring the fore-finger of her right hand, well moiſtened with pomatum or freſh butter, as far as the mouth of the womb, or farther, if poſſible, and reſting this finger againſt the navel-ſtring, move it gently, ſometimes to the right, ſometimes to the left, ſometimes upwards, ſometimes downwards, and, in ſhort, in every direction, to ſhake the *placenta*, and ſeparate it; which often ſucceeds.

If this firſt trial is uſeleſs, it will be proper to ſuffer the womb to contract a little, becauſe it is certain that by contracting, it will rid itſelf of the *placenta*, which cannot contract alſo. But there is reaſon to fear leſt the mouth of the womb, contracting in proportion, ſhould deny entrance into the womb; but this inconvenience may be prevented, by keeping the hand in the mouth of the womb for a quarter of an hour, to keep it diſtended; after which a freſh trial may be made, and, in all probability, with more ſucceſs.

But if the *placenta* ſtill reſiſts, the right hand muſt be introduced along the navel-ſtring, as far as the *placenta*, to remove it. The midwife muſt be careful not to meddle with its circumference, becauſe ſhe might be deceived by the womb, which would be fatal; but muſt attempt it near the affixment of the navel-ſtring, by plunging the fore-finger under the ramifications of the large branches of the vein and umbilical arteries, making uſe of this finger to ſeparate the *placenta*.

The misfortune is, that it ſometimes happens in the firſt attempts which are made, that the navel-ſtring is broke, by pulling it too forcibly, and nothing is left to guide us to the *placenta*, in order to ſeparate it with the fingers, as has juſt been obſerved. The danger is eaſily conceived to which the woman would be expoſed, by miſtaking the womb for the *placenta*. In a caſe of this kind, therefore, a very ſkilful perſon ſhould be employed to ſearch for the *placenta*, who can diſtinguiſh it from the ſurface of the womb,

by the large ramifications of the veſſels in its center; and who, after having examined every thing, muſt endeavour to ſeparate it, by forcing the finger into its ſurface, in the manner that has been juſt deſcribed.

But if ſome part of the edge is already looſened from the womb, which is often the caſe, its extraction will be much eaſier, becauſe it may be continued to be ſeparated by this place, by pulling the part which is looſe, with one finger, and preſſing back the womb with another.

The hand which is introduced into the womb, is to be uſed for extracting the clots of blood, and perhaps even ſome pieces of the *placenta*, which may be met with there; though this ſhould not hinder the uſe of injections into the womb for ſome days, of a warm decoction of mallows, marſh-mallows, and linſeeds, to prevent any extraneous ſubſtances from lodging there.

It may perhaps be thought ſurpriſing, that I do not propoſe any of thoſe remedies, which moſt authors recommend ſo ſtrongly, to procure the diſcharge of the *placenta* left in the womb: but I have never found the leaſt virtue in theſe remedies; and I do not like to perpetuate chimerical prejudices, by quoting remedies which I do not approve.

CASE III.

Of the difficulty which proceeds from the coming down of the navel-ſtring before the child.

THE navel-ſtring commonly follows the child in delivery; but it ſometimes precedes it, and comes firſt into the paſſage, which is the preſent caſe. This accident generally happens in one of the three following caſes: 1ſt, When the navel-ſtring is very long. 2dly, When the child is a long time in fixing its head into the mouth of the womb, which allows time for the navel-ſtring to ſlip there. 3dly, When

the

the waters are in great plenty, and in diſcharging drag the navel-ſtring along with them.

In general, the navel-ſtring may entangle itſelf in the paſſage on two different occaſions, either when the membranes are ſtill whole, or when they are ruptured. In the laſt caſe, it is eaſily known, that the navel-ſtring is come down into the paſſage; becauſe it is felt without any intervening medium. It may be known alſo in the other caſe, through the membranes, though not with ſo great certainty or eaſe; which makes it neceſſary ſometimes to rupture the membranes to be certain thereof; and it is even the beſt way always, becauſe delivery will be thereby accompliſhed more eaſily.

Having done this, if the child preſents with its head, the navel-ſtring is to be put aſide; and kept there by the top of one of the fingers, until the firſt ſucceeding pain forces the child's head into the paſſage; after which, there will be no farther reaſon to apprehend the coming down of the navel-ſtring again. Afterwards, delivery is to be accompliſhed in the common manner, and with the uſual precautions.

But if the child's feet preſent, or its bad poſture in the womb makes it neceſſary to place it in this poſition, it muſt be brought there as quickly as poſſible, after having put the navel-ſtring aſide, and within the womb, which muſt be done with proper attention, and afterwards the remainder of delivery will be eaſy.

I muſt not omit a caſe that frequently happens, in which the navel-ſtring hinders and retards delivery; that is, when it makes one or two turns round the child's neck: if theſe turns are looſe, we need not trouble ourſelves much about them; but if they are tight, and the child is ſuffered to advance in this condition, it will either be ſtrangled, or will ſeparate the *placenta* with violence; and even ſometimes cauſe an inverſion of the womb.

It ſhould therefore be quickly remedied before the child is too far engaged in the paſſage; for this purpoſe, the woman is to be placed on her back, with her hips raiſed, to return the womb into the belly, and the child into the bottom of the womb. By means of this ſituation we gain a ſufficient liberty of acting to paſs once or twice, if neceſſary, the navel-ſtring over the child's head, and diſentangle the neck; after which there will be nothing more required than to conduct delivery after the common method *.

CASE IV.

Of the difficulty which proceeds from the membranes.

IT has been already obſerved, that the waters ſhould be kept in a natural birth, to facilitate the motion of the child in its membranes; to preſerve the ſuppleneſs and lubricity of theſe membranes and the child; and to hinder the inflammation and ſwelling of the internal ſurface of the womb.

Conformably to this principle, the waters are ſuffered to fall down; that is to ſay, to gather themſelves in the *vagina*, into a bag formed by the extenſion of the membranes, until the child's head is lodged in the paſſage. Then the impulſe of the child on the waters contained in this bag ruptures the membranes which form it, the waters are diſcharged, the child follows ſoon after, and delivery is happily accompliſhed.

But it ſometimes happens that theſe membranes are ſo ſtrong, or ſo thick, that the efforts of the child are not ſufficient to rupture them, which ſtops the courſe of labour, and hinders the child's advancing.

* Dr. Exton in this caſe adviſes, when the navel ſtring is found much twiſted about the child's neck, whilſt the navel-ſtring is held, to let an aſſiſtant paſs a pair of ſciſſors, and divide it: by this method the danger of ſtrangling the child will be entirely prevented; there will be no hazard of breaking the navel-ſtring, or forcibly tearing off the *placenta*, to all which accidents in this caſe we are liable without great care. *R.*

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To remove this obſtacle, the membranes muſt be ruptured, which the midwife muſt not fail doing; after which delivery will be attended with no farther difficulty.

I ſhall only inform midwives of but little experience, that they ſhould not rupture the membranes till they are very certain the child's head is half engaged in the paſſage, in order that the ſecond waters, which are placed behind the child, and whoſe preſence is ſtill neceſſary, may not be diſcharged. 2dly, That ſhe ought to tear them with her nails, which are ſufficient for this operation, or, however, with a very ſhort knife, which may be introduced between the fingers.

CHAP. IV.

Of difficult labours from cauſes merely accidental.

CASE I.

Of the difficulty which proceeds from abortion.

I Do not deſign to treat abortion in this treatiſe in the extenſive manner which the importance of the ſubject ſeems to demand; becauſe I have amply taken notice of it in the twelfth chapter of the third book of my treatiſe on *The Diſorders of Women*: beſides, I do not think it neceſſary for midwives to burthen themſelves with the theory of abortion: all that is requiſite for them to know, is reduced to the three following articles. 1ſt, How they ought to manage when ſent for to a pregnant woman, threatened with a miſcarriage. 2dly, What midwives ought to do when the woman has abſolutely miſcarried. 3dly, How they ſhould behave if ever ſent for to a woman who has made herſelf miſcarry; but, terrified at the danger, deſires aſſiſtance.

Article I.

How a midwife ſhould manage if ſent for to a woman threatened with a miſcarriage.

I PROPOSE to ſpeak here only of injuries which are merely accidental, and proceed from ſome external cauſe; ſuch as a fall, a falſe ſtep, a blow on the belly, an obſtinate cough, reachings to vomit, ſtrains from riding on horſe-back, dancing, running, crying, or having lifted ſome heavy weight.

If in conſequence of ſome of theſe accidents, a pregnant woman feels violent pains in her back, loins, and belly; if the child is no longer felt to ſtir, or ſtirs but very faintly, and, which is a ſtill ſtronger ſymptom, if a diſcharge of bloody ſerofity, and even of blood ſhould enſue, there is great reaſon to fear miſcarriage: though none of theſe ſigns are deciſive, not even the bloody diſcharge itſelf; for this diſcharge may proceed from the *vagina*, or from the mouth of the womb being partially dilated.

In theſe circumſtances, if the midwife is ſent for firſt, as is generally cuſtomary, ſhe muſt order the woman to be put to bed, and nine or ten ounces of blood to be taken from the arm. Adminiſter a clyſter, compoſed of the decoctions of mug-wort and feverfew, with a couple of ounces of oil of ſweet almonds; embrocate her belly with Venice treacle, diſſolved in red wine, or with fomentations compoſed of the decoctions of red roſes, plantain, balauſtins, Solomon's ſeal, &c. apply a ſtrengthening plaiſter to the back, and direct the following bolus to be taken every four hours (leaving out the Mathew's pill after the firſt doſe,) with four ſpoonfuls of the following julap. Take Mathew's pill, red coral prepared, and dragon's blood, each fifteen grains, Japan earth ſix grains, and make into a bolus with ſyrup of balſam. Take tincture of roſes, prepared according to the London Diſpenſatory, half a pint; tincture of Japan earth,

earth, and ſimple tincture of the bark, each one ounce, and mix them together into a julap.

But ſhe will act more prudently if, when the affair ſeems to her of conſequence, ſhe ſends for a phyſician under whoſe cognizance this diſorder more immediately comes. With reſpect to her, ſhe ſhould content herſelf to examine if the child is in its proper place, or fell down; if its motion is natural, or languid and weak; if the mouth of the womb is open or cloſed; if the diſcharge encreaſes or not, in order to judge whether the danger of miſcarriage increaſes or leſſens.

Theſe kind of alarms terminate differently; ſometimes theſe accidents give way to reſt, and the remedies which are made uſe of; the woman feels no more pain nor cholic; her health is entirely re-eſtabliſhed, and ſhe goes to the end of her time: but in this caſe, ſhe muſt be perſuaded to be extremely careful of herſelf. Sometimes the ſymptoms increaſe, the belly falls, and frequent and violent pains come on, which paſs from the back towards the belly; the diſcharge encreaſes, the womb dilates more and more, and a miſcarriage enſues. Sometimes matters remain in their firſt ſituation; the diſcharge continues, but is not great; the pains continue alſo, but are not very violent; and the woman flatters herſelf that her caſe is attended with no danger. I ſhall examine both theſe caſes in the following article.

Article II.

How the midwife ought to act when the woman has miſcarried, or the ſymptoms continue, though leſs violent, with a continued diſcharge of blood.

BOTH theſe caſes come to the ſame point; the only difference between them conſiſts in this; that in the firſt, the miſcarriage has already happened; whilſt in the other caſe, it is not quite ſo near at hand, though unavoidable: that the midwife may be ready to do her

her duty in either of theſe caſes, it is neceſſary for her to know,

That miſcarriage is a premature excluſion of a child already conceived, though ever ſo lately:

Conſequently that miſcarriage may happen during every period of pregnancy until the end of the ninth month, or beginning of the tenth, when the child has acquired its full growth, and its excluſion is a natural birth.

That it has been cuſtomary, though no reaſon can be given for it, to call miſcarriages which happen during the firſt and ſecond months of pregnancy, and even ſometimes during the third, *falſe conceptions*, though they are real conceptions, however ſmall the fœtus or infant may be which is contained in them.

That the name of abortions is to be given to all the excluſions which happen during the remainder of pregnancy, even to children of ſeven or eight months, with this difference only, that in abortions of four, five, or ſix months, the child is not alive, becauſe it is not yet perfectly formed: whilſt children are frequently alive in the ſeventh or eighth month; becauſe then their conformation is more advanced, and approaches nearer the perfect conformation of the ninth month compleated.

That abortions of the two firſt months happen with very little or no diſcharge of blood, and with very little or no difficulty, *without pain*; becauſe the after-birth, which contains the embryo, adheres but very ſlightly, or not at all to the womb, whence it is eaſily ſeparated, *without a diſcharge of blood*; becauſe the venal appendages are not at all dilated in the firſt month, and very little in the ſecond. Laſtly, *Without difficulty*, or very little; becauſe this conception, which is not bigger than a pidgeon's or pullet's egg, paſſes eaſily through the mouth of the womb, along with the diſcharge of blood.

That other miſcarriages are difficult and painful, even more ſo than natural labour, when the child

is very large, for many reaſons. 1ſt. Becauſe in miſcarriages, which proceed from a violent cauſe, the ſeparation of the *placenta* is effected by force, and conſequently with pain. 2dly, Becauſe this violent and ſudden ſeparation of the *placenta* almoſt always ruptures ſeveral of the venal appendages of the womb, which have not time to contract themſelves; which occaſions their bleeding more plentifully, and much longer. 3dly, Becauſe theſe miſcarriages happen without the mouth of the womb's having been mollified by the reſidence of the child, as in natural labour. 4thly, Becauſe the abortion does not help its excluſion by its kickings, or helps but very little; while the child of nine months compleat, which is ſtronger, aſſiſts it efficaciouſly. 5thly, Becauſe the after-birth, which in abortions is larger than in natural labour, is ſtopt in the paſſage, through which the child, being much ſmaller, has paſſed without difficulty, and thus renders delivery more tedious and difficult.

On theſe facts, which are certain, a prudent midwife ſhould found her prognoſtics, and regulate her conduct: remembering that all miſcarriages are attended with a great loſs of blood, ſhe muſt haſten the delivery of the child, ſince this is the only method by which ſhe can ſucceed in ſtopping the hemorrhage.

If miſcarriage is already begun, and the mouth of the womb ſufficiently dilated, to admit of introducing the fingers, they muſt be made uſe of to rupture the membranes, in order to diſcharge the waters. If the head of the child then preſents in a proper manner, or can be placed ſo, delivery is to be performed in this manner, with the uſual precautions.

If the child's feet preſent, or the midwife is obliged to bring it into this poſition, which muſt be done with the utmoſt dexterity, ſhe muſt deliver it by the feet, making uſe of all the precautions which this kind of labour requires.

In a miſcarriage, attended with a great loſs of blood, the *placenta* is already ſeparated, and preſents at the orifice immediately after the child. But, if its ſize prevents its paſſing, for the *placenta* is larger in abortions than in natural labours, as has been already remarked, it muſt in this caſe be taken hold of by its centre, under the large branches of the umbilical veſſels, which will aſſiſt to extract it: however, if this fails, it muſt be torn to pieces, and extracted piece-meal. The patient, after having been put to bed, may take a little broth, or ſmall cordial; and if the pulſe riſes after four or five hours, which denotes the approach of a fever, ſhe muſt loſe ſome blood from the arm, unleſs the loſs of blood has been very great already.

But if the midwife is prudent, ſhe will not charge herſelf with the management of the woman in a caſe always difficult, and frequently dangerous, but will call in the aſſiſtance of a phyſician.

In the ſecond caſe, abortion is not ſo near at hand; but it is nevertheleſs unavoidable: midwives have a long time flattered themſelves, and ſtill do ſometimes, that they could prevent it: but experience proves how ill grounded theſe hopes are. The pains of the belly, cholics, &c. continue, though ſubject to variations; the diſcharge of blood continues, ſometimes in greater, ſometimes in leſs quantity, but continually encreaſes; the woman is brought low, exhauſted, and becomes weaker every day: theſe ſymptoms ſhew the ſeparation of the *placenta*; but that it is a partial ſeparation only, which keeps up the diſcharge of blood, without cauſing a miſcarriage.

As it is certain that the *placenta*, which is partly ſeparated from the womb, can never adhere thereto again, we muſt not flatter ourſelves that the woman can go her full time; for being exhauſted by degrees, ſhe at length periſhes with her offspring, if ſhe is not ſuccoured; and the only efficacious aſſiſtance that can be given, is to deliver her. All other

remedies which are made uſe of, or found in authors, are abſolutely inefficacious: but this delivery muſt be accompliſhed by force; for there is no diſpoſition for a natural labour; and this is the method which all men-midwives practiſe. I have been ſent for ſeveral times in caſes of this kind, and being thoroughly perſuaded that both mother and child would be loſt, whatever other ſteps were taken; I thought it my duty to determine on a forced delivery, agreeable to the wiſe remark of *Celſus*: "In an evident danger of death, it is better to apply a doubtful remedy than none." But I acknowledge, that in adviſing this meaſure, I felt a great concern; becauſe I knew the danger of what was about to be undertaken.

If there is an opportunity, the parts may be ſoftened for ſome days with peſſaries, compoſed of the emollient herbs, or ſimply dipt in an emollient decoction, provided they are frequently renewed; by the uſe of emollient fomentations on the belly; and by adminiſtring emollient clyſters.

When this operation is determined on, the midwife having firſt taken care to evacuate the contents of the bladder and inteſtines, and well moiſtened the mouth of the womb and *vagina* with pomatum, muſt at firſt introduce one finger into the orifice, and move it in different directions, to dilate it. A ſecond finger is to be introduced as ſoon as ſhe can; and by ſeparating theſe fingers as wide as ſhe can, room will be made for the introducing of a third and fourth ſucceſſively, and even of the whole five, narrowed into the ſhape of a cone: then, by ſeparating theſe fingers, they become a kind of dilator, and by degrees the mouth of the womb is opened ſufficiently to introduce the whole hand; the membranes are then to be ruptured, the waters diſcharged, the child immediately turned, and delivered by the feet. The midwife is then to endeavour to extract the after-birth in the manner which has already been ſhewn, book IV. chap. II.

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caſe II. After which the patient is to be put to bed, ſhould take ſome kind of cordial, and be ſuffered to reſt an hour or two before ſhe takes any thing more. But if after the expiration of three or four hours, her pulſe riſes, ſhe muſt be bled in the arm, to the amount of nine or ten ounces, which is to be repeated, if neceſſary, and a fever comes on; to endeavour to prevent, or leſſen the inflammation of the womb.

I do not adviſe midwives to undertake ſo difficult and dangerous a delivery. I do not think even that any man-midwife ſhould be ſo imprudent as to perform this operation, without firſt calling in a phyſician to determine whether it is neceſſary; to be a witneſs of his conduct; and ſuperintend the treatment which its conſequences may require.

Article III.

How a midwife ſhould act when ſent for to a woman who has been uſing means to procure a miſcarriage.

I DO not believe midwives are ever capable of being accomplices in this crime with young women or widows, who, to ſave their honour, take the reſolution of procuring a miſcarriage. But it often happens, that theſe unhappy creatures, frightened at the conſequences of their enterprize, and afraid of dying, deſire aſſiſtance, not without reaſon; for the nature of the remedies and practices they have made uſe of, the efforts of the womb, the violent ſeparation of the *placenta*, and ruptures of the venal appendages, and even ſometimes of the coat of the womb, cauſe violent pains, and convulſions of the womb, a prodigious diſcharge of blood, and a conſiderable inflammation, attended with a gangrene, or at leaſt an ulcer, and almoſt always in the ſequel gives riſe to ſchirrous or cancerous tumours in the womb: if thoſe who are guilty of this crime knew to what dangers they expoſed themſelves, I believe the fear of death would deter theſe unhappy wretches, who are not reſtrained by the fear of God.

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In theſe deplorable circumſtances, they frequently beg the aſſiſtance of midwives. I have myſelf been ſent for four or five times in caſes of the like kind, and whatever abhorrence I had for theſe people, I did not fail to aſſiſt them charitably, and I ſucceeded ſo far as to ſave ſome of them. Midwives may be ſent for in two different caſes; one in which miſcarriage is conſummated, but the child remains ſtill in the womb with the after-birth; or the child already delivered, and nothing more required than to ſtop the exceſſive loſs of blood, which the remedies that have been made uſe of, and the violent ſeparation of the after-birth, have occaſioned.

In the firſt caſe, to ſtop the hemorrhage, the midwife muſt make haſte to deliver the child; and for this purpoſe make uſe of all the means which have been pointed out in the preceding article. If the midwife perceives ſome motion in the child, or it cries, though ever ſo faintly; after having made two ligatures on the navel-ſtring, one near the child's navel, the other a few inches higher, and having cut the navel-ſtring between them, ſhe muſt deliver the child to an aſſiſtant, who ſhould endeavour to revive it, by making it ſuck ſome drops of wine on a lump of ſugar: as to herſelf, ſhe muſt proceed to the extraction of the after-birth; and by this means the firſt caſe is reduced to the ſecond, and nothing more is required than to endeavour to leſſen the diſcharge of blood.

For this purpoſe, after having placed the woman on a cuſhion of oat-ſtraw, through which the blood may drain, ſhe muſt be ſuffered to take a little reſt, and a little broth may be given her: but ſoon after ſhe muſt be bled in the arm, and loſe ſuch a quantity of blood as the ſtate of her pulſe will permit. The bleeding is to be repeated, if her ſtrength allows; but in a very ſmall quantity at a time.

Her common drink ſhould conſiſt of clear whey, or, which is better, chicken-water, and ſmall quantities of

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veal-broth, in which great comfrey roots have been boiled: ſhe may alſo take every hour two or three ſpoonfuls of a mixture compoſed of the decoction of plantain and great comfrey roots, five ounces each; of tormentil roots, biſtort, and drop-wort, each half a drachm; of dragon's-blood and French chalk in fine powder a drachm each; and two drachms of the confection of *alkermes*, if the ſtate of the pulſe requires it, or a few drops of laudanum, if neceſſary, to quiet the pain and convulſions of the womb.

After all, the beſt method is to give directly the decoction of the comfrey root, into a pint of which about fifty-five or fifty-ſix drops of Rabel's ſtyptic are added, and an ounce and an half of ſyrup of capilaire; if the complaint is preſſing, as it is always in the beginning, the whole pint may be drank during the day, in ſmall doſes, and warm; afterwards the doſe may be leſſened, in proportion as the diſcharge diminiſhes. If the caſe is very preſſing, this mixture ſhould be injected warm into the womb. I have remarked in my *Treatiſe of the Diſorders of Women*, vol. v. p. 350, That a midwife in a like caſe, being in the country, deſtitute of every other remedy, injected warm vinegar into the womb, not only without danger, but even with the greateſt ſucceſs.

The midwife has beſides two eſſential duties to diſcharge, firſt, to ſend for a clergyman to the patient, declaring that the caſe is urgent, and will admit of no delay; the other, to call in a phyſician, who may aſſiſt her with his advice, inſiſting that ſhe neither can nor ought to undertake alone an affair of ſuch difficulty and importance.

CASE II.

Of the difficulty that ariſes from a dead child.

THIS caſe comprehends two, which muſt be treated ſeparately; *the firſt* regards the extraction of a child dead in the womb; *the ſecond*, the extraction of the head,

head, which is ſeparated from the child's body, and remains in the womb.

Article I.

Of the extraction of the child.

THE child may die in its mother's womb at two different times; in the courſe of pregnancy, which happens from a fall of the mother, from a blow received on the belly, or from ſome violent diſorder, as a fever, pleuriſy, bloody flux, ſmall pox, &c. or from ſome diſorder of the child; in the time of labour, when it is very tedious, and the child being expoſed to violent compreſſions during labour, remains a long time in the paſſage, or is treated too roughly.

The death of the child in the courſe of pregnancy, is preſumed from the nature and violence of the preceding cauſes, which were capable of killing it; ſuch as the fall, the blow received on the belly, the diſorder which the mother laboured under, &c. and becauſe the mother no longer perceives the child to move, her belly falls, her breaſts become lank, ſhe finds herſelf ill frequently, without any manifeſt cauſe, and has a diſcharge from the womb of black and fetid *ſerum*. Theſe cauſes are conjectures only, but that is ſufficient; for in this caſe, we muſt wait till nature decides. It is ſufficient to adviſe the pregnant woman to take care of herſelf, and keep herſelf quiet; to obſerve a proper regimen, and take between whiles a little ſack or mountain wine, or ſome mild cordial, when ſhe is low ſpirited and faint.

The ſame ſigns appear alſo when the child dies during labour; but they are not ſufficiently deciſive to determine the conduct of the midwife, who muſt manage the child with the greateſt care, if it is ſtill alive. To prevent a miſtake, ſhe ſhould be very certain that the child is dead; and this ſhe cannot be, unleſs ſhe obſerves ſome one of the following ſigns, or, which renders it ſtill more certain, perceives ſeveral of them.

1ſt, If upon introducing the hand well moiſtened with pomatum as far as the navel of the child, ſhe does not feel the umbilical arteries beat; but the hand muſt be paſſed quite to the navel, for the midwife may be miſtaken if ſhe contents herſelf with feeling the umbilical arteries along the cord, becauſe their pulſation is in this place very weak.

2dly, If the child does not ſuck the end of the finger when put in its mouth, if ſhe can reach ſo far.

3dly, If the *placenta* and navel-ſtring have been come down a long time, which never happens without occaſioning the child's death.

4thly, If the ſutures of the ſkull are lax and flabby, and the bones which join together ride over each other, which proves that the brain is ſunk.

5thly, If the ſcarf ſkin, and eſpecially that of the hairy part of the head, comes off and ſticks to the fingers.

6thly, If there iſſues from the womb a ſharp blackiſh ſtinking diſcharge, which never happens till the child has been long dead, and begins to putrify, the midwife muſt be careful not to confound this diſcharge with the *meconium* or kind of pitch, which ſometimes iſſues in difficult labours. This is only the excrements which the child voids when the belly is ſtrongly compreſſed, through its bad poſition, eſpecially when it preſents with the breech, and does not at all ſhew that it is dead.

When the midwife is well aſſured of the child's death, ſhe ſhould haſten to extract it, and arm herſelf with courage and patience; for this kind of delivery is in general long and difficult, for many reaſons.

Becauſe the womb not being irritated by the motions of the child, the mother has only weak and unfrequent pains.

Becauſe the child does not aſſiſt delivery at all, by preſſing its head againſt the mouth of the womb, to dilate it.

Be-

Becauſe the ſoftneſs of the child's body occaſions its having not the leaſt conſiſtence; and in the room of keeping at its full length, it gathers itſelf up like a ball.

Laſtly, becauſe in the delivery of a dead child, for the little time it ſtays, the womb is in a ſtate of *phlegoſis*, which hinders its contracting.

With reſpect to the manner of acting in this caſe, it is certain; if the mouth of the womb is not ſufficiently dilated, ſhe muſt dilate it by degrees, by making a kind of dilating inſtrument with her five fingers, until ſhe can introduce her hand; then the membranes are to be ruptured, and the waters diſcharged, if they are not already drained off, and the child is to be turned and delivered by the feet; proceeding therein with dexterity and patience, for fear of hurting the womb. This is the only means of delivering the child, becauſe in this ſituation it is eaſier to extract it by laying hold of its feet and legs, which cannot be done when the head preſents: it is true there is danger leſt the head ſhould lodge in the paſſage, and be ſeparated from the body; but this never happens when the midwife is prudent enough to turn the child's face downwards. And in caſe the flabbineſs of the child's body renders this operation impoſſible, ſhe may, provided ſhe uſes proper attention, and does not haſten delivery too much, deliver the dead child with its face upwards, without the head's lodging on the *os pubis*, unleſs the putrefaction is ſo great that the head no longer adheres to the body.

Hence it follows, that when even the child preſents with the head, as in natural labours of the firſt kind, it muſt be turned and delivered by the feet; and for this purpoſe the woman is to be placed in a ſupine poſition, to return the womb into the cavity of the belly, and the child into the womb, and by this means gain ſufficient room to ſearch for the feet, turn the child, and deliver in this manner.

This rule has one exception only, when the head is ſo far engaged in the paſſage that there can be no hopes

of being able to puſh it back: in this caſe we muſt be forced to extract it in this poſture; but as no hold can be taken of the head, crotchets were generally made uſe of, from which nothing can be apprehended with reſpect to the child, which is dead; but may prove fatal to the mother, if they ſhould happen to ſlip.

To make uſe of the crotchets, the left hand, being firſt well moiſtened with pomatum, was introduced between the edge of the mouth of the womb and the child's head, the crotchet was ſlid along the palm of this hand, until it reached the orbit of the eye, or, which was better, the ſhell of the ear; then the crotchet was fixed, by forcing its point into one of theſe cavities; after which, by pulling the handle of the crotchet with the right hand, and directing the child's head with the left, a paſſage was endeavoured to be made for the child: but ſometimes, to ſucceed in this, a ſecond crotchet was obliged to be placed on the oppoſite ſide, which gave juſt reaſon to fear leſt one of theſe crotchets, often but badly fixed, ſhould loſe its hold, and occaſion a dangerous wound in the mouth of the womb, which ſometimes happened.

When the head was once paſſed, the reſt of the body generally followed eaſily; but if the ſhoulders ſtuck in the paſſage, which ſometimes happened, one of the fingers of the right hand was endeavoured to be paſſed under the child's arm-pit, and was made uſe of as a crotchet to accompliſh its extraction; and if the finger could not reach ſo far, they made uſe of a crotchet very finely poliſhed, without any point, which was introduced under the arm-pit, and made uſe of to extract the trunk.

When the child was once extracted all was over; for the after-birth either was already come away of itſelf, or came away preſently after. It remained only to give a meſs of broth to the lying-in woman, and leave her afterwards to her repoſe for ſome time to recover herſelf; but a few hours after, an injection or two, compoſed of a warm decoction of marſh-mallow

roots,

roots, with a little honey, was thrown into the womb, to wash its internal surface, and remove the *sanies* which the dead child might have left there.

At present, the practice is entirely changed, and men-midwives, to extract a dead child which is lodged in the passage, use only Levret's crooked forceps, the success of which is certain, and free from danger. See the foregoing short *History of the Art of Midwifry*, article 2d, number 4.

Article II.

The method of extracting the head of an infant, when left in the womb.

THE child's head is sometimes left in the womb in footling delivery, as has been just observed. This accident frequently happens, when the child cannot be turned, on account of its flabbiness, and is obliged to be delivered with its face upwards; because in this posture the chin frequently sticks to the bones of the *pubis*, and the head lodges there: but this accident more frequently happens when the child is half putrified, and thereby its head very weakly joined to the body.

This accident is very troublesome: for to deliver the woman, it is necessary to extract this head, which is very difficult, not because the head cannot pass through the mouth of the womb, but because it should be pushed forward from within, or pulled from without, to make it pass, both of which are impossible, or at least very difficult. *On the one hand*, nothing pushes it forward from within, for the womb does not contract at all, or but very weakly, and coughing sneezing, vomiting, and the straining which may be excited, afford but little assistance, when the womb does not act. *On the other hand*, nothing can pull it outwardly, because the head being round allows of no hold.

In theſe circumſtances, the aſſiſtance which nature does not furniſh has been endeavoured to be ſupplied by art, and different expedients have been invented, which I ſhall deſcribe, though they are almoſt all ſubject to inconveniencies.

The right hand is propoſed to be introduced into the womb, and the fore finger and middle finger placed in the child's mouth, reſting the thumb under the chin, and this hold is to be made uſe of to extract the head.

This expedient is plauſible and practicable; for the head, which is lodged in the womb in footling labour, preſents its baſis to the mouth of the womb, and conſequently it is not difficult in this poſition to find the child's mouth, introduce the finger into it, and extract the head, and I think this method has been found uſeful; but when the child has been dead for ſome time, the lower jaw ſeparates, and is brought away, without extracting the head.

When this accident happens, it is propoſed to remedy it by graſping the head with the right hand, and introducing the fore finger along the child's palate, as far as the great *foramen*, through which the *medulla oblongata* paſſes, into which it is to be paſſed, ſpreading the other three fingers along the face, and reſting the thumb firmly againſt the back part of the head.

Authors flattered themſelves that by laying hold of the head in this manner they ſhould be able to extract it, and it were to be wiſhed that the ſucceſs anſwered their expectation. I queſtion whether this method was ever tried; for it is evident that the head, covered with glair and blood, would ſlip out of the hand, and this expedient could amount to no more than extracting the head piece-meal.

I ſhould approve extremely of the following invention, if it was practicable: a fillet of ſtrong linen which has been uſed, of about half an ell long, and about four

four or five fingers breadth, is to be held with both ends in the left hand, and brought round the child's head, after which, by gently drawing both the ends, the head is to be extracted.

I think this might ſucceed, if it was eaſy to paſs this fillet behind the head; but this appears impoſſible, or very difficult, and I ſuſpect that this method has never been put in practice.

I might ſay as much of the net propoſed by Mr. Amand, man-midwife, for the ſame purpoſe; it was a very ingenious contrivance, but I queſtion whether it has been ever made uſe of *.

Mr. Gregoire, man-midwife, made uſe of an inſtrument of ſteel of the ſhape of a capital L, the ſurface of which was perfectly ſmooth, and without angles; this inſtrument opened into two blades, which were joined together by an hinge. This inſtrument was to be introduced into the womb with both blades ſhut cloſe to each other, and was to be directed by the left hand into the *foramen*, or large hole in the *occipital* bone; then opening the inſtrument, it becomes double; and as then its ends cannot paſs out of the *foramen*, this inſtrument ſerves to extract the head directly.

I ſee no inconvenience in this practice, which may eaſily be made uſe of, becauſe the head, which is left in the paſſage, preſents the hole or *foramen* of the occipital bone, oppoſite the orifice of the womb, provided that all the vertebræ, or bones of the neck, are ſeparated from the head; but it cannot be of any uſe, if any of the vertibræ adhere to the head.

* This net is made of ſilk, almoſt like a purſe, with ſtrings to draw it cloſe, and large enough to contain the head of the child; the net, being hung on the fingers of the right hand, is paſſed into the womb, and the head being taken into the palm of the hand and held tight, the operator endeavours to engage it in the net, which, when he hath done, with the other hand he pulls the ſtrings, which are loug enough to hang out when the net is cloſe, then draw, and the head will be brought away, without any danger of hurting the woman.

A pointed crotchet made, as has been explained in the preceding article, is recommended to be made uſe of, by introducing the left hand, well moiſtened with pomatum, into the womb, as far as until the ends of the fingers reach one of the orbits of the eyes, or holes of the ears, and conducting the crotchet along the palm of the hand, as far as the orbit, or hole of the ear which the fingers touch, and plunging in the point of the crotchet, turning it round, to give it the firmeſt and ſtrongeſt hold that is poſſible, and by the help of this crotchet, which is pulled with the right hand, the head is extracted, clearing the way for it as much as poſſible with the fingers of the left hand.

The reluctance which ſhould be had for the uſe of the crotchet, in extracting dead children, has been already ſhewn in the preceding article. The danger is ſtill greater in this caſe, becauſe it is ſtill more difficult to reach to the orbits, or holes of the ears; beſides, it is to be feared, in the extracting of a dead child, that in pulling, the crotchet might loſe its hold, and wound the womb. There is ſtill greater reaſon to apprehend this accident, when it is made uſe of to extract the head, becauſe the head, when ſeparated, being moveable, we cannot be ſo certain of the hold of the crotchet as in an head fixed to a dead child.

The moſt certain method is to make an inciſion on the top of the head along the *ſagittal* ſuture, take away the brain, flatten the bones of the ſkull, and lay hold of one of the *parietal* bones, and thereby extract the head. For this purpoſe, the left hand, moiſtened with pomatum, is to be introduced into the womb as far as till the fingers reſt upon the *ſagittal* ſuture. Afterwards a concealed *biſtory* muſt be ſlid along the left hand as far as that part of the head to which the fingers of the left hand are applied; the biſtory is then to be raiſed up, and an inciſion made on the *fontanel*, and along the *ſagittal* ſuture lengthways; then it is to be withdrawn along the left hand, with

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the ſame precaution and dexterity with which it was introduced; the brain is to be extracted through the inciſion with the left hand; the bones of the ſkull are to be preſſed together, to flatten them, leaving one of the *parietal* bones, to ſerve for the extraction of the head.

While this operation is performed, ſomebody ſhould preſs on the woman's belly, to force the head againſt the mouth of the womb, and keep it in a fixed ſtate; but with all theſe precautions, this operation is often found impracticable, becauſe the head, inſtead of preſenting with its crown, preſents always the contrary ſide, which excludes this operation. It is true, the head is propoſed to be turned; but thoſe who propoſe it, do not at all conſider that it is very difficult, not to ſay impoſſible, to turn a head the ſurface of which is ſlippery, clammy, and affords no hold.

The reflections which have been made on all the methods which are propoſed for extracting the head left in the womb, will, no doubt, diſcourage midwives from undertaking an operation of this kind, and I commend them for their prudence: I thought it my duty, nevertheleſs, to ſhew them, at leaſt conciſely, the different methods, that they might not be ignorant of a circumſtance which concerns the art they profeſs; conſequently I ought not to ſuffer them to be ignorant that all theſe difficulties are at preſent removed by the invention of Mr. Levret's crooked forceps, by means of which, the head left in the womb is extracted eaſily, and without danger*. What has been ſaid on this ſubject may be ſeen in *The Short Hiſtory of the Art of Midwifry*, article 2d. number 4.

* The *placenta* is not to be extracted till after the head is brought away, becauſe that may occaſion a flooding; unleſs the *placenta* ſhould be ſeparated, in which caſe it may be firſt extracted. R.

CASE III.

Of the method of extracting a mole, or falſe conception.

I HAVE explained in the ſeventeenth chapter of the third book of my *Treatiſe of the Diſorders of Women*, the nature of generation, and of falſe conceptions; and I do not think it neceſſary to repeat it here. This theory is ſcarcely neceſſary for midwives, and if any one is curious enough to deſire to know it, they may conſult that book. I ſhall content myſelf with remarking, that three ſpecies of moles are to be diſtinguiſhed.

The firſt kind is an after-birth a little disfigured, in which the *placenta* has acquired a larger ſize, and the embryo has periſhed very early. When the *placenta* continues adhering to the womb, after the death of the child, and receives nouriſhment therefrom, it acquires a conſiderable ſize, and is the *mole*, properly called ſo, which will be the principal ſubject of this article; for it ſometimes happens, that towards the ſecond or third month of pregnancy, when the embryo periſhes, the *placenta* is ſeparated, and remains in the womb without increaſing at all, and forms there a ſmall *mole* of the firſt kind, of the ſame nature with the preceding, but leſs known, or, to ſpeak more properly, leſs taken notice of.

The *mole* of the ſecond kind is formed by a cluſter of hydatids, or tranſparent veſicles, adhering each by a ſtalk to a ſpongy body, of a ſpherical or oval ſhape, full of a clear or yellowiſh *lymph*, which vary in their ſize from the bigneſs of a pea to that of a pidgeon's egg; this kind of *mole* was a long while unknown, but is at preſent aſcertained by certain obſervations. It is called the *hydatid mole*.

The *moles* of the third kind do not deſerve this name; they are nothing more than pieces of the *placenta* left in the womb in ſome preceding labour, which

which have remained there without putrefying, or encreaſing in ſize, and by the compreſſion of the womb are become round and compact, but in which the cavity is not found that is met with in *moles* of the firſt kind, and which is eſſential to them.

Though it is uſeleſs to midwives to be acquainted with the cauſes of the formation of *moles*, it is very uſeful for them to know the ſigns which denote their exiſtence in the womb, and may ſerve to diſtinguiſh them from other diſorders to which they bear ſome reſemblance.

The large *mole* of the firſt kind, which is that whoſe diagnoſtic it is of conſequence to be acquainted with, has four proper ſigns, being accompanied in its formation with all the ſymptoms which happen in the beginning of pregnancy, ſuch as inclination to vomit, longing for ſtrange things, &c. without perceiving any motion at any time in the womb; it increaſes faſt, and arrives in nine months to a much greater ſize than a child, and forms a ſpherical tumour, but not hard: whence this mole may be diſtinguiſhed from other ſwellings of the womb, with which it has ſome reſemblance; as,

1ſt, From *pregnancy*, becauſe the motion of the child in pregnancy is felt after the fourth month: while in the *mole* no motion is felt, and the ſwelling of the belly continues round, inſtead of ſwelling lengthways, as it does in pregnancy.

2dly, From *the dropſy of the belly*, becauſe in the beginning of the dropſy, the ſymptoms of pregnancy are not perceived, as in the formation of the *mole*, and from not feeling in the *mole* on ſtriking the belly on each ſide, the counter-blow which is felt in the dropſy.

3dly, From a *ſchirrus*, becauſe the inconveniencies of pregnancy, which are experienced in the formation of the *mole*, are not felt in the formation of a *ſchirrus*; and in a *ſchirrus* the tumor is hard and unequal, inſtead of being ſoft and even, as it is in the *mole*.

4thly,

4thly, From a *ſteatoma*, or *polypus* of the womb; becauſe this diſorder is not preceded like the *mole*, by the ſymptoms of pregnancy, and is formed much ſlower than the *mole*.

The *mole* of the ſecond kind, or *hydatid mole*, is very ſcarce; its formation is attended with the ſame inconveniencies which women labour under at the beginning of pregnancy. Inſtead of forming a ſpherical tumour, it forms a flat and ſoft tumour, which diſtinguiſhes it from the *mole* properly ſo called. It adheres to the womb by a ſmall baſis; ſeparates eaſily by its weight alone, towards the eighth or ninth month; and falling down upon the orifice of the womb, ſollicits its diſcharge by the ſame mechaniſm as the infant, and procures it eaſy enough, becauſe the cluſter of veſſels, of which it is formed, eaſily adapts itſelf to the opening which the mouth of the womb preſents.

With reſpect to the little *mole* of the firſt kind, and the falſe *mole* of the third, they are ſo ſmall that women do not perceive them, and conſequently do not require troubling ourſelves about them; they are diſcharged of themſelves in the next labour, or if any conſiderable flux of blood happens, or a plentiful diſcharge of the *whites*.

There is only therefore the large *mole* of the firſt kind, or rather the *mole*, properly ſo called, which merits our attention. The other *moles*, which have been mentioned, either never adhered to the womb, or if they did adhere, ſeparated of themſelves ſoon; while this large *mole* very ſeldom ſeparates, and remains connected to the womb, not only during nine months, like the child, but a great while longer, according to undoubted obſervations.

As this *mole* continually increaſes, while it adheres to the womb, and would become of a monſtrous ſize, its extraction ſhould be attempted when its exiſtence is certain, which cannot be perfectly known, till towards the fourth or fifth month of pregnancy. To

effect

effect this there are two operations to be performed, both very difficult, and very dangerous, for which reaſon the midwife ſhould not conceal from the parents the prognoſtic which ſhe draws therefrom.

The *firſt* is to procure the ſeparation of the *mole* from the womb, which is difficult; becauſe in the *mole*, as the *placenta* has encreaſed very much in ſize, and is much larger than the *placenta* of a child, even at its full time; it adheres more ſtrongly than the *placenta* does in a common birth.

The *ſecond* is to effect the delivery of the *mole*, to which the womb is not at all diſpoſed, and to which it is not at all excited by the *mole*, which has no motion*.

To facilitate the firſt operation, it is propoſed, firſt, to relax and ſoften the womb by the uſe of warm baths, mineral waters, which are gently purgative, emollient injections, emollient fumigations, and by receiving through a cloſe-ſtool, the vapour of the decoction of mallows, marſh-mallows, bear's foot, mullein, &c. Secondly, to uſe afterwards emenagogues, which, by provoking the courſes, may ſeparate the *mole* from the womb, for which purpoſe preparations of ſteel, and mercurials which are not purgative, are directed in ſtrong doſes. Thirdly, the action of theſe remedies are aſſiſted by making the patient ſneeze, vomiting and purging her ſtrongly, directing her to ride in a jolting coach over the ſtones, and to jump down ſtairs often, by two ſtairs at a time.

Theſe means ſucceed ſometimes, but ſeldom; for which reaſon, inſtead of perſiſting in the uſe of them, as ſoon as their utility is known, a forced labour ſhould be attempted, ſuch as has been propoſed, to remedy an habitual loſs of blood, which happens during pregnancy; relative to which conſult the fourth chapter of this book, caſe the firſt, article the ſecond.

* What has been ſaid on this ſubject, may be ſeen in the preceding article.

After having placed the woman in a proper poſture, and charged ſome perſon to hold her hands, the hand well moiſtened with pomatum is to be paſſed into the *vagina*, and one of the fingers, generally the middle finger, is to be attempted to be introduced into the mouth of the womb, and moved there in different directions to enlarge the orifice. Then the fore finger is to be introduced, and by ſtretching theſe two fingers in different directions, the orifice will be dilated ſufficiently to admit the introduction of the end of all the fingers cloſed together.

Theſe five fingers, thus introduced, form a kind of wedge, and by ſtretching them become a kind of dilator. By this means the mouth of the womb is by degrees ſufficiently dilated to allow of the introduction of the hand. The part by which the *mole* adheres is then to be ſearched for, which is towards the bottom of the womb; when it is found, one finger is to be reſted upon the *mole*, the other on the womb, and by ſeparating them from each other, the operator attempts to diſplace the *mole*; as ſoon as he begins to ſucceed, he advances the two fingers, and by continuing to act in the ſame manner, by degrees he increaſes the ſeparation of the *mole*, and at length entirely accompliſhes it.

Towards the end, diſpatch muſt be made uſe of; becauſe, in proportion as the *placenta* is ſeparated, a hemorrhage comes on.

The *mole*, when ſeparated, falls down towards the mouth of the womb; and to keep it there, the woman's body muſt not only be raiſed up a little, but ſome ſenſible perſon ſhould be charged to compreſs the belly gently, to prevent the *mole* from riſing into the bottom of the womb, and its extraction ſhould be attempted without delay. This muſt not be expected to be effected by the common methods. To undertake it would be a very difficult, painful, and almoſt impoſſible taſk; and we muſt try the whether

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crotchet, or any of the kind of forceps which have been contrived, can be made uſe of: but I have already mentioned the danger of the crotchet, the uſe of which may be pernicious; that of the forceps is moſt certain, but they afford but very little aſſiſtance, when the *mole* is of a certain ſize; ſo that in this caſe, we muſt determine to tear it in pieces, and extract it piece-meal.

In conſequence hereof, the fingers are to be plunged into the ſubſtance of the *mole* as far as poſſible, to tear off large pieces from it; and thus complete, by degrees, the entire extraction thereof. But if the *mole* ſhould be too compact to allow of forcing the fingers into its ſubſtance; in this caſe, a biſtory, concealed in a ſheath, the blade of which is elevated by depreſſing the ſpring, muſt be had recourſe to. To uſe this, the left hand is to be paſſed into the womb till it touches the mole, then the inſtrument is to be ſlid along this hand with the right hand, and ſeveral deep inciſions are to be made in the mole, directing the inſtrument with the left hand. When theſe inciſions have been made, and the inſtrument cloſed and withdrawn, the fingers are to be plunged into theſe inciſions, and thereby the mole is eaſily torn aſunder, and extracted piece-meal. When this is done, the hand is gently paſſed into the womb, to extract the clots of blood and ſmall pieces of the mole which might remain behind.

During the operation, ſome cordial is to be adminiſtered which is not too inflaming, which may be repeated if neceſſary, after the operation is finiſhed. The patient is then put to bed, and an hour or two after takes a meſs of weak broth; and if the pulſe riſes three or four hours after, ſome blood is to be taken from the arm, which is to be repeated according to the degree of the fever, and danger of the inflammation.

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I hope, after what has been ſaid on this ſubject, midwives will have no deſire to undertake ſo difficult and dangerous an operation. It is true, it is rendered at preſent eaſier by the uſe of Mr. Levret's crooked forceps, with which *moles* are extracted without making inciſions into them, unleſs they are very large.

BOOK V.

Of accidents which ſometimes happen in labour.

CHAP. I.

Of the falling down or deſcent of the womb.

I DO not propoſe to give here a particular account of the cauſes, ſymptoms, and cure of the falling down or deſcent of the womb, having treated on it largely in my treatiſe on *the Diſeaſes of Women*, which may be conſulted. I ſhall content myſelf with giving a ſhort idea of the nature and cauſes of this diſorder, which ſometimes happens in childbirth, to make what I ſhall ſay of the means of knowing and remedying it, the better underſtood.

The mouth of the womb projects into the vagina half an inch at leaſt, and the vagina connected to the womb ſurrounds it pretty nearly in its natural ſtate, and is tight and firm enough not to permit the womb to project farther.

While matters remain in this ſtate, the womb is kept in its place, but it advances into the vagina, or, if the expreſſion is better liked, it deſcends into it, when that part of the *vagina* which is connected thereto, is very much dilated, or eaſy of dilatation, and the womb is puſhed forward with ſufficient ſtrength to overcome the reſiſtance of the *vagina*.

The *vagina* may be too much dilated from a natural conformation, or by ſome preceding labour of a very large or monſtrous child.

The *vagina* may be too eaſy of dilatation, either from its being naturally ſoft and furniſhed with few muſcular fibres, or from its being relaxed and molli-

fied from an habitual diſcharge of the *whites*, eſpecially if the diſcharge is of a ſerous kind.

The womb may be too ſtrongly forced into the *vagina*, by ſome violent efforts, vomiting, a *teneſmus*, ſneezing, or violent fits of coughing.

From the concurrence of theſe cauſes it ſometimes happens that the whole body of the womb, with the child it contains, deſcends into the *vagina*, with its mouth foremoſt: ſometimes it deſcends no farther than the middle of the *vagina*, and then the deſcent is incomplete; but ſometimes it frees the orifice of the *vagina*, and falls into the *Pudenda*, and then it is called a complete bearing down.

Every midwife muſt know this caſe, becauſe they muſt know the neck of the womb, and eſpecially its mouth, which is very remarkable for its ſhape and its tranſverſe opening; hence the ſmalleſt attention muſt be ſufficient to make them comprehend, that the body which comes forward into the *vagina* is the womb itſelf, and not the child.

The deſcent of the womb in labour is always dangerous, both for mother and child; and the more dangerous, according as it is greater or leſs: it is *dangerous for the mother*, becauſe ſhe ſuffers from the dragging of the womb, which is diſplaced, and cannot be delivered on account of the preſſure to which the womb is expoſed, which hinders its contracting, becauſe in this ſtate the womb is expoſed to be inflamed, and even mortified: it is *dangerous for the child*, becauſe, compreſſed as it is, delivery cannot be accompliſhed; and there is room to be afraid of its periſhing in the poſture in which it is, as often happens.

The midwife therefore ſhould make haſte to remedy this accident as ſoon as poſſible, which becomes ſo much the more troubleſome, as the womb deſcends lower.

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For this purpoſe the woman is to be placed on her back, with her hips raiſed higher than the reſt of her body, and after the right hand has been well moiſtened with pomatum, it is to be paſſed into the *vagina*, and made uſe of to puſh the womb back into its place; but this muſt be done without violence.

If the efforts are ſufficient to give room to hope that the womb will dilate of itſelf, the midwife ſhould wait the ſucceſs of it, aſſiſting, nevertheleſs, its dilatation. But if the pains are weak and but few, ſhe muſt dilate the orifice, by introducing the fingers, one after another, in the manner which has been already directed ſeveral times.

When the mouth of the womb is ſufficiently dilated, the hand is to be introduced into the womb, the membranes are to be ruptured, and the waters diſcharged; the poſture of the child will then be known, and if its head preſents in a proper poſition, delivery may be left to go on in this ſituation.

In every other ſituation, and even in that which has juſt been deſcribed, if labour droops thro' the weakneſs of the mother and child, the child muſt be turned in the manner which has been already frequently deſcribed, and delivered by the feet, which is eaſily done, and does not require ſo much aſſiſtance from either mother or child. But whatever means are made uſe of, the left hand muſt be kept in the *vagina* during delivery, to ſtop the edge of the mouth of the womb, and hinder its following the child in delivery, and dragging the womb with it, until the child is come into the paſſage, when it may be withdrawn, for fear of its hindering delivery.

After the child is delivered, the after-birth is to be extracted in the uſual manner; afterwards the patient is to be put to bed, with her hips a little raiſed, and her thighs placed cloſe together, without attempting any thing more, till ſhe is quite got up

again; when this diſorder muſt be endeavoured to be cured, or at leaſt its conſequences prevented, by the remedies which are to be met with in my Treatiſe on the Diſorders of Women, eſpecially by the uſe of a peſſary, which is very ſmooth*.

CHAP. II.

Of the inverſion of the womb.

WE muſt not confound the inverſion of the womb with its bearing down or deſcent, which has been mentioned in the preceding chapter. In the deſcent, it is the body of the womb itſelf which deſcends into the *vagina*, keeping beſides its natural ſhape; while in the inverſion of the womb, the bottom thereof is turned inſide out, and projecting through the orifice of the womb, preſents outwardly its internal ſurface, and forms a large tumor in the *vagina*, at firſt about the ſize of an egg or an apple, but if neglected, ſometimes equals the ſize of a child's head.

This inverſion only happens in labour, becauſe it can never happen except when the mouth of the womb is open, which it never is, except in labour. It proceeds ſometimes from the imprudence of the midwife, who by pulling too rudely the *placenta*, that adheres to the bottom of the womb, pulls inſide out the bottom of the womb at the ſame time. Sometimes from convulſions of the womb after a difficult labour, which force the bottom inſide out, through the mouth of the womb, which is not yet cloſed, nearly as the contractions of the inteſtines in violent cholics force one part of the gut into another, ſometimes the ſuperior part into the inferior, and

* Diſeaſes of Women, book ii. c. 10.

and ſometimes *vice verſa*, which is the cauſe of the *iliac* paſſion.

From whatever cauſe the inverſion of the womb proceeds, it is always a very dangerous accident in labour. For as the veſſels of the womb are then very large, and the blood is brought to this part in great plenty, the part of the womb which is inverted ſwells in a moment, in proportion as the mouth of the womb which compreſſes its baſis, hinders the return of the blood which it contains ſo great a quantity of.

This inverſion of the womb not only ſwells quickly, but becomes indurated from the cold's coagulating the blood, and what is ſtill worſe ſoon mortifies, unleſs remedied.

When this accident happens, midwives are moſt generally embarraſſed very much. The greateſt part of them have not the leaſt idea of an inverſion of this kind; and when it happens cannot tell what to think of it. Some of them think it is the *placenta*; and when the *placenta* is already extracted, imagine that it is a *mole*, and conſequently uſe their utmoſt endeavours to extract it, which increaſes the diſorder and the danger; but it is eaſy to give them inſtructions. Whenever a ſpherical body of an unequal ſurface, and full of little holes, through which the blood iſſues, of a ſoft ſpongy ſubſtance, without any opening to ſhew it to be the body of the womb itſelf, iſſues out of the mouth of the womb, we may be ſure that this body is the bottom of the womb itſelf turned inſide out, eſpecially if it happens in a labour attended with convulſions of the womb, or if the midwife has cauſe to reproach herſelf with having extracted the *placenta*, which adhered to the bottom of the womb, too roughly.

But when the caſe is doubtful, the moſt certain method, and that which ought to be taken, is to force back into the womb this body as ſoon as it ap-

pears, in which there is no riſque. If it is the womb which is returned into its proper place, the patient's life is thereby ſaved; if it is the *placenta*, we ſhall have an opportunity to extract it, when we are aſſured of its being ſo: And if by chance it was a *mole*, we ſhould have time to take the proper methods for its extraction.

For this purpoſe the woman muſt be placed in a ſupine poſture, with her hips raiſed higher than the reſt of her body; after which the right hand, being firſt well moiſtened with pomatum, muſt be introduced into the *vagina* as far as the ſwelling, which is to be gently puſhed back into the womb, beginning with the ſides, as is the method in reducing ruptures. This body is to be conducted by the fingers quite to the bottom of the womb, which is its place, and by withdrawing the hand it will be known whether it contains ſome part of the *placenta*, or ſome monſtrous *fœtus*, as was imagined; and if this ſhould be the caſe, it might be taken care of by the means which have been already ſhewn; but this caſe is ſo rare that it does not deſerve our attention.

Every thing being thus re-inſtated, if the womb continues affected with convulſive motions, which might cauſe a new inverſion thereof, the hand muſt be kept at the entrance of the mouth of the womb to prevent this danger, until the orifice is cloſed, or the convulſions ceaſe. By this means the diſorder is perfectly cured, and the woman feels no more of it when her month is up, different from the bearing down, or deſcent of the womb, with which the patient remains afflicted, and inſtead of a perfect cure, is frequently obliged to be contented with a palliative cure only.

CHAP.

CHAP. III.

Of convulsions of the womb during labour.

CONVULSIONS of the womb which happen in labour, are always a very troublesome, and frequently a fatal symptom.

These convulsive motions are of different kinds; sometimes there is a fluttering or trembling of the womb, the motion of which is so violent and quick, that the midwife's hand, which is exposed to it, is entirely numb'd, as if she had touched a cramp fish; and this happens through the same mechanism.

At other times these motions affect the whole body of the womb at large, sometimes contracting it from the right to the left, sometimes upwards and downwards, backwards and forwards, and sometimes in all these directions together; but these motions are not continual, and generally admit of some intervals of relaxation.

Sometimes these convulsions of the womb communicate with the *diaphragm* and other parts, whence the whole body is affected; and the disorder resembles a fit of the *epilepsy*, forasmuch as the patients lose their sense and feeling, and have the mouth full of froth, and sometimes even bloody foam.

Lastly, these convulsive motions, when they are universal, are joined with a profound drowsiness, such as is known by the name of a *carus* or *cataphora*; and this happens when these convulsions assume the likeness of an epileptic fit: But sometimes this drowsiness is without convulsive motions, and the patient seems attacked with an *apoplexy*.

The convulsive motions of the womb described in the two first articles, proceed from the concurrence

of two united cauſes, viz. The violent impreſſions the child makes in the womb, when it is confined, compreſſed, or ſick; and the too great ſenſibility of the inſide of the womb, on which theſe impreſſions produce ſtronger effects than they would if the womb was not poſſeſſed of ſo great a ſhare of ſenſibility; whence it proceeds that theſe convulſive motions happen moſt commonly to young and very delicate perſons, to hyſterical, epileptic, or timorous women, eſpecially when labour is tedious and difficult, and the child being ſtrong and vigorous, agitates the womb violently.

As in the caſe propoſed in the third article, two diſorders are complicated; it is eaſy to conceive, that it muſt proceed from two cauſes; the impreſſions which the child makes on the womb, which poſſeſſes too great a degree of ſenſibility, and produces the convulſive motions, as has juſt been explained; and from the fulneſs of the blood veſſels of the brain, which by compreſſing it, produce the drowſineſs.

This congeſtion of blood in the veſſels of the brain, is cauſed by the convulſive contractions of the womb, and the other *viſcera* of the belly, and by compreſſing the trunk of the *aorta inferior* force the blood in too great plenty into the ſuperior branches of the *aorta*, and thus cauſe a congeſtion of blood in the veſſels of the brain.

With reſpect to the apoplectic drowſineſs, which has been mentioned in the fourth article, it proceeds, as may be readily imagined, from a congeſtion of blood in the veſſels of the brain, but from a greater congeſtion than that which produces the firſt kind of drowſineſs: Thus this accident happens only to women of a plethoric conſtitution, who have neglected to loſe blood during pregnancy, and have a tedious and painful labour, that brings into a

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ſtate of contraction all the parts of the lower belly, which by compreſſing the inferior *aorta*, force almoſt all the blood towards the head: when this drowſineſs is confirmed, the convulſive motions ceaſe, becauſe the ſmall quantity of animal ſpirits which are then ſeparated in the brain, are not ſufficient to continue them.

The four caſes which have juſt been obſerved, are of great importance, and, as has been already ſaid, are often fatal.

In the firſt caſe, the child being numbed by the agitation of the womb (like the midwife's hand when ſhe paſſes it therein) is not in a ſtate to uſe the neceſſary motions to aſſiſt delivery; and the womb itſelf in this caſe is not capable of contracting as it ought; ſo that delivery does not advance, and in the mean time the child being expoſed to continual blows, ſoon periſhes.

It is very nearly the ſame in the ſecond caſe; the child being ſtrongly compreſſed by the contraction of the womb, cannot aſſiſt delivery; and the womb ſtill leſs, becauſe the contractions with which it is agitated hinder the neceſſary contractions for delivery: Thus every thing is put a ſtop to, and the child ſoon periſhes, from being violently bruiſed by the contractions of the womb.

In the two laſt caſes, as the head is affected, and the light-headedneſs encreaſes, the mother's life is in very great danger, and conſequently the child's; ſuppoſing it has reſiſted till this time the blows to which it has been expoſed.

As this ſymptom is very preſſing and very dangerous, the midwife ſhould not undertake the management thereof alone, but would do right to ſend for a phyſician: In the mean time ſhe ſhould not heſitate, as ſoon as the convulſions come on, to order the woman to be bled in the arm if the head is not affected,

affected, or in the foot if she has reason to apprehend a delirium: This is the most efficacious step that can be taken, and the physician will not fail to repeat these bleedings, almost immediately one after the other, three or four times, if the state of the pulse permits.

Emollient fomentations are at the same time to be applied to the belly, and clysters which are gently purgative, and even merely anodyne, are to be administred. The patient may also be put into the warm bath, to take off the tension, and effectually relax the fibres and membranes of the womb. Some physicians recommend an emetic in this case, but this practice has not been received, because there is reason to apprehend, that the violent contractions of the *diaphragm*, and muscles of the belly, which vomiting excites, would, by contracting the womb, and compressing the child, occasion its death.

The only efficacious step that can be taken in this dreadful situation, is to accelerate delivery, because it is certain, that as soon as the child is delivered, the convulsions of the womb cease or diminish, so far as to give no room to apprehend the mother's life to be in danger, especially if she cleanses well: But this delivery must not be attempted, except in the intervals of the convulsions, in the two first cases; for this reason the midwife should be careful to make the utmost advantage of these intervals.

If the womb is already sufficiently dilated to allow of introducing the hand, it is a great step gained; but if it is not, it must be dilated by the successive introduction of the fingers, as has been already several times explained; by this means the hand will at length be introduced into the womb; the membranes of the child are then to be ruptured, if they were not before; and whatever

ever poſture the child is in, it muſt be turned and delivered by the feet, with the uſual precautions, becauſe this is the ſhorteſt method of delivery, and that in which we can give the greateſt aſſiſtance.

If the after-birth comes away with the child, the midwife muſt give the whole to the nurſe, who is to hold it before the fire until the midwife has placed the woman in bed, and given her a ſpoonful or two of mountain wine, after which ſhe is to cut and tye the navel-ſtring of the child, clean it and roll it up.

But if the after-birth does not come away with the child, the midwife muſt make a double ligature on the navel-ſtring, and divide the navel-ſtring between theſe ligatures; and after having delivered the child to the nurſe, muſt ſet about extracting the *placenta*, by the methods directed in book iv. chap. 3. caſe 2.

CHAP.

CHAP. IV.

Of the rupture of the womb.

THE rupture of the womb is one of the moſt fatal accidents which can happen in labour, ſince it occaſions the death of both mother and child at the ſame time, tho' examples are not wanting of women who have ſurvived it; as for inſtance, a woman at *Tholouſe* in France, who carried a child in the cavity of her belly, for twenty-five years, into which it had opened itſelf a paſſage in a bad labour, by rupturing the womb, as appeared on opening this woman after her death.

This misfortune happens when the child is ſituated obliquely in the womb, or, which is worſe, acroſs from one ſide to the other, and being ſtrong toſſes itſelf about violently, till after many vain efforts it at laſt ruptures the womb, with its head or feet, according to the reſiſtance which the ſides of the womb afford. Sometimes the rupture is ſmall, and only a part of the child's body can paſs through it; but it ſoon enlarges it, ſufficiently to paſs through it quite, and falls towards the right or left ſide of the belly.

This event may be known by many ſigns, if we will but attend to them, viz. The bad ſituation of the child, which is eaſily known, its violent motions in the womb, which it enlarges to the right and left, and ſhortens from the top to the bottom, and occaſions the mouth of the womb, inſtead of advancing into the *vagina* and dilating, to mount upward and contract itſelf. Laſtly, the violent pains which the woman ſuffers, and in which ſhe remarks, that the efforts of the child are intolerable. From the concurrence of theſe ſymptoms, or at leaſt a part of them, it is time to prevent the danger which

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we foreſee, and the only means of ſucceeding, is to procure delivery without delay.

For this purpoſe, introduce the right-hand, moiſtened with pomatum, into the *vagina*, as far as the mouth of the womb, and dilate it by degrees, by introducing the fingers ſucceſſively until the hand can be introduced. When this can be done, make uſe of it to tear the membranes, if they are not already ruptured; and to bend the legs, thighs, or body of the child, in order to ſhorten its length, and put an end to its efforts againſt the ſides of the womb, and take the advantage of the play which this affords, to endeavour to turn the child, and deliver it by the feet. But if the after-birth does not come away with the child, the midwife muſt not quit her place until ſhe has extracted it; and to do this, muſt get rid of the child, after having made a ligature on the navel-ſtring.

If this operation ſucceeds, we ſave at one ſtroke both mother and child; but it is attended with many difficulties. *On the one hand*, the mouth of the womb dilates with great difficulty, and it is very difficult to introduce the hand, which does not give us much room to hope to deliver the child. *On the other hand*, when the hand is at laſt introduced, the child is found ſo locked up, and tightly compreſſed, that we are very much perplexed to bend the legs, thighs, or body of the child, to diminiſh its length, and procure a little room to turn the child, without which it is impoſſible to deliver it. If theſe difficulties diſcourage us, and we are obliged to abandon the enterprize, the womb preſently ruptures, and is ſoon followed by the death of both mother and child, which hardly ever ſurvive it.

A German phyſician, who has wrote a very good diſſertation on this ſubject, propoſes the *Ceſarean* operation as a remedy for this unfortunate accident, when it happens; and he has reaſon on his ſide:

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it is certain we might thereby ſave the child, and have juſt reaſon to hope to ſave the mother; for after all, the rupture of the womb is not incurable, or at leaſt not always ſo. But to render this operation uſeful, it ſhould be performed almoſt immediately after the rupture happens, for the mother and child periſh ſoon after; and how can this operation be performed on a woman who has juſt undergone a very violent ſhock, who is then generally in an alarming ſwoon, and in ſo weak a ſtate, that her pulſe can ſcarcely be felt? In ſuch dreadful circumſtances, the patient muſt be allowed ſome little reſpite; and we muſt endeavour to recover her ſtrength, by a few ſpoonfuls of mountain wine, or ſome light cordial, and make uſe of the firſt favourable moment to perform, not the *Cæſarean* operation, for there is no inciſion to be made into the womb, but a ſimple inciſion of the belly only, which is much leſs dangerous, yet ſufficient to ſave both mother and child.

CHAP.

CHAP. V.

Of the laceration of the perinæum, or partition which ſeparates the PUDENDA *and* ANUS.

THIS partition is formed only of the tunics of the *pudenda* and *anus*, applied againſt each other, or at leaſt containing between them nothing but the *cellular* membrane; whence it is not ſurpriſing that this partition is ſometimes lacerated in childbirth, and that both openings make but one, which is a ſad accident.

This misfortune happens, firſt, when the child is too large. 2dly. When the womb is inclined forwards, which occaſions the head of the child to bear backwards, and conſequently on this partition. 3dly. When the midwife, in paſſing her hand into the *vagina*, bears too hard on this part: or, that the man-midwife, in uſing the crotchet in caſes in which its aſſiſtance is neceſſary, preſſes too much on this place: ſtraight forceps are attended frequently with the ſame inconvenience; but this has been happily remedied, by making them curved.

Young women are particularly expoſed to this accident, when the lips of the *pudenda* are thick, firm, compact, and unfit to lengthen and extend, which makes the whole violence of the extenſion fall on the *perinæum*, unleſs the midwife is very attentive to prevent it. This attention conſiſts in endeavouring to rectify the oblique poſition of the child's head; in well anointing the circumference of the *pudenda* with pomatum, to mollify and render it extenſible; in introducing a finger into the *anus*, to force back the *os coccygis*, and ſupporting the preſſure of the child on the *perinæum*, to thereby prevent its laceration.

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The inconvenience of an accident of this kind, which expoſes the *pudenda* to be almoſt always daubed with the excrement, eſpecially when the laceration is great, which cannot render theſe women at all agreeable to their huſbands, muſt be eaſily conceived: there is but one method of remedying it; namely, to unite its lips together as ſoon as poſſible, which is eaſily done, when the laceration is not large; and a ſingle ſtitch is ſufficient, which can be made with a needle moderately crooked; but it is much more difficult when in a longer rent, a ſecond, or a third ſtitch, muſt be made, which cannot be done without difficulty, and making uſe of a needle almoſt circular.

Before the ſuture is applied, the wound, if recent, muſt be waſhed with warm wine; and if an old wound, its edges muſt be pared off with ſciſſars, in the manner that is done in the operation for the hare-lip. When the ſutures have been made, introduce into the fundament a large tent of linnen, dipt in ſome proper digeſtive ointment, ſuch as yellow baſilicon, or *Arceus's* liniment; and dreſs the wound in the *vagina* with pledgets ſpread with the ſame ointments, covering the whole with a cere-cloth, or linen-plaiſter, to hinder the urine from fretting the wound.

The patient ſhould keep her bed till the cure is compleated, which will be pretty far advanced towards the twelfth day; during this period, ſhe muſt keep entirely to ſpoon meats, to prevent too much excrement, and eſpecially hard excrement, from being formed. Even that which is formed, ſhould be ſoftened by emollient clyſters; and care ſhould be taken to waſh the part every time the patient goes to ſtool, as is uſual in the operation for the *fiſtula in ano*.

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The patient muſt alſo be adviſed, when the cure is compleated, to avoid being with child any more; or, if ſhe ſhould be ſo, to put herſelf under the care of a ſkilful and prudent midwife, who will be careful to moiſten the part well with pomatum, during labour, and will guard as much as poſſible againſt too violent a diſtenſion, for fear of a freſh laceration.

CHAP. VI.

Of the Ceſarean operation.

IN this operation, we make an inciſion at firſt through the integuments of the belly, in a pregnant woman; and, afterwards, another inciſion thro' the membranes of the womb itſelf, to extract the child, which is incloſed therein: it is practiſed in three different caſes. 1ſt. In a woman who dies near the end of her pregnancy, from a fall, a blow, an apoplexy, poiſon, ſtab of a ſword, in ſhort, of a death ſudden enough to give reaſon to think that the child is not dead, and may be ſaved by opening the mother. 2dly. In a living woman, when it is evident that the child is dead, and cannot be extracted by any other method, which renders this operation, cruel as it is, abſolutely neceſſary to ſave the mother. 3dly. In a woman who has gone her full time, but cannot be delivered by the common methods; in which caſe, this operation muſt abſolutely be reſolved on, to ſave the mother, or child; and even both of them, when it is performed early.

I do not ſuppoſe that midwives would ever be raſh enough to undertake operations of this kind; nevertheleſs, I think it proper to inſtruct them how they are to be performed, and what opinion is entertained of them, and what they themſelves ought to think relative thereto. For this purpoſe, I ſhall divide this chapter into two articles: in the one, I

ſhall ſhew a manual of this operation; and in the other, ſhall remark the opinion that ſhould be entertained thereof.

ARTICLE I.

A deſcription of the Ceſarean operation.

THE ceſarean operation, which is performed on the woman when dead, as in the firſt caſe, has nothing alarming nor difficult in it. The ſame precepts are to be obſerved here, which I ſhall give for this operation in the living woman, at leaſt when an inciſion is to be made into the womb, to extract a living child: for, with reſpect to the inciſion of the belly, we are under no reſtraint. For this reaſon, if I ſpeak of this operation on the dead woman in the firſt place, it is becauſe that it is the moſt antient, and ſerves to give an idea of the manner of performing this operation on living ſubjects. But this operation is not to be performed, except we are morally certain of the death of the mother, as will be obſerved in the following article.

As to the operation on the living woman, as in the two laſt caſes, it is one of the greateſt and moſt dangerous operations in ſurgery, and ſhould never be reſolved on, except when it is clear that there is no other method of ſaving both mother and child, or at leaſt one of them.

Before this operation is undertaken, a clyſter is to be adminiſtred, to empty the inteſtines. The bladder of urine muſt alſo be emptied; after which, the woman is to be placed in a convenient poſition for the operation, with the belly a little raiſed, and muſt be ſecured by ſeveral aſſiſtants, who are to hold her hands, thighs, and even the body, to ſpare her the horror of being tied down.

Authors

Authors differ in their opinion, with reſpect to the part of the belly on which the inciſion is to be made; ſome propoſe to imagine a ſtraight line drawn from the middle of the *os pubis* to the higheſt part of the ſpine of the *os ilion*, and make the inciſion in the middle of, and in the direction of, this line. Others * adviſe to imagine a line drawn from the anterior extremity of the ſpine of the *os ilion*, to the junction of the laſt of the true ribs, with its cartilage, and to chuſe for the inciſion the middle ſpace between this line and the *linea alba*. Theſe deciſions differ but little; and I think either of them may be followed without inconvenience.

In the beginning of the operation a razor may be uſed, with a piece of fine linnen wrapt round it, to keep it firm and ſteady in its ſcale: afterwards, a good biſtory, or inciſion-knife, is ſubſtituted in its room. Mr. Levret propoſes to † uſe a crooked biſtory, which cuts only with its convex ſide; and I ſhould imagine this inſtrument preferable, becauſe it makes a more uniform, and continued inciſion, which is of great conſequence.

The inciſion may be made at option, either in the right or left ſide, but the preference is generally given to the ſide towards which the womb inclines moſt. At firſt, the ſkin, fat, and integuments, are boldly cut through, as far as the *peritonæum*; but when we come to this part, we muſt uſe more circumſpection, and make a ſmall opening through it.

To enlarge this opening, a grooved probe muſt be uſed, to direct a common biſtory; but it is more convenient to make uſe of one of the fingers of the left-hand, the *fore-finger*, or *middle-finger*; and by its aſſiſtance, conduct a blunt pointed biſtory.

* Mr. Levret, ſequel of his obſervations, p. 251.

† The ſame.

This inciſion of the belly ſhould be ſix or ſeven inches long, to be able to introduce the hand without lacerating any part.

When the inciſion is made in the belly, the inteſtines eſcape, which renders it neceſſary to deſire ſomebody to keep them in. The ſtate of the womb, which preſents ſide-ways, is to be then examined. It is very ſeldom that the *placenta* adheres to this part; but if it ſhould, we ſhould endeavour to avoid it, becauſe it would prove a very great impediment. The reſt of the operation is eaſier, when we know, by feeling, that there is nothing in this place but the membranes of the child.

Before this operation is performed, we ſhould examine whether the *waters* are diſcharged or not; if they are ſtill contained in the membranes of the after-birth, we ſhall be leſs incommoded in making an inciſion through the womb, becauſe the *waters* form a medium between the womb and child; but, on the contrary, we muſt proceed with more precaution in making this inciſion, if the *waters* are already diſcharged, and the child's body in contact with the womb.

We act in the ſame manner in making this inciſion, as in making an inciſion in the belly, and uſe the ſame crooked biſtory. The inciſion ſhould be five or ſix inches long. The hand is then introduced into the womb, the membranes ruptured, if they were not ſo before, and the *placenta* ſeparated carefully, if it ſtill adhered to the womb; the hand is then paſſed under the child, and it is taken out with the after-birth, and delivered to a proper perſon, while the operator continues buſied about the mother.

The blood which proceeds from the divided veſſels, which is not in ſuch great quantity as one might reaſonably apprehend, is to be ſucked up with a ſponge: the womb is left intirely to itſelf, and by

contracting, ſoon returns into the *pelvis*; and with reſpect to the wound of the belly, two or three ſtitches are made therein, as in all other wounds of the *abdomen*. A few ſpoonfuls of ſome mild cordial are given the patient, and ſhe is put to bed, and placed on that ſide on which the wound is, in order to facilitate the diſcharge of blood which proceeds therefrom, by this depending poſture.

About an hour afterwards, the patient may take a baſon of broth; and if, in the ſequel, the fever becomes violent, ſhe is bled in the arm, which is repeated according to the ſymptoms, and the ſtate of her ſtrength: the patient is to be kept to ſpoon meats during the whole courſe of the cure.

Some pledgets of dry lint are at firſt applied to the external wound. Theſe pledgets are afterwards ſpread with yellow baſilicon, or ſome other digeſtive ointment: and, according to the ſtate of the wound, with proper balſams, or liniments; at firſt, anodyne injections, if thought proper; and, afterwards, deterſive injections may be thrown into the wound of the belly between the ſutures; they may alſo be injected into the womb through the *vagina*. Except this, the cure is left to nature, without our attending to it more particularly.

ARTICLE II.

Obſervations on theſe operations.

THE firſt of theſe operations has been practiſed a very long time ago, on women who have died towards the end of pregnancy, to extract from their womb the children of which they were pregnant, and endeavour to ſave their lives. Pliny * acquaints

* Natural Hiſtory, book vii. chap. 9.

us, that three children were ſaved at Rome by this means, who afterwards became very illuſtrious perſons. "Scipio Africanus the elder; *(P. Cornelius "Scipio)* the firſt of the Ceſars, ſo called from his "being cut out of his mother's belly; *Ceſo matris "utero*, * and Manlius, who entered Carthage at the "head of an army." Since which time, this operation has been performed in the like circumſtances with general approbation. Sentiments of humanity have induced the world to embrace it, being deſirous of preſerving the lives of children.

But this operation, the propriety of which admits of no contradiction, does not fail to give uneaſineſs when propoſed to be put in execution. It ought never to be undertaken but when the mother is dead. How dreadful would it be, if ſhe ſhould ſhew ſigns of life in the midſt of the operation. I am thoroughly ſatisfied that ſlight tremblings, of the parts which are wounded, are not ſufficient to determine that ſhe was alive, for I remember to have obſerved the like in dogs which were quite dead, whenever I diſſected them while warm; but tremblings which might happen in this caſe, in a woman's body, would not fail to cauſe the ſharpeſt remorſe.

In this circumſtance, what muſt be done? *On the one hand*, we muſt wait for certain proofs of the mo-

* It has been ſuppoſed, inconſiderately enough, that, by theſe words *primuſque Ceſarum à cæſo matris utero dictus* Pliny meant Caius Julius Cæſar, who became emperor, as if he had come into the world by this operation performed on his dead mother; but could they be ignorant that Aurelia, the mother of Cæſar, lived a long time after the birth of her child; that the father and grand-father of Cæſar bore that name, joined to the name of Julius: on which ſubject, conſult John Glandorpius, *on the family of the Julian race*. Laſtly, That in the Julian family, to which Cæſar belonged, there were two branches; one of which was named *Tullius*, the other *Cæſar*, which, according to the report of Pliny, proceeds from the *firſt Cæſar*, who gave it to his branch, from his having been cut out of his mother's womb.

ther's

ther's death, before the operation is performed: *On the other hand*, it is of conſequence to make this opening as ſoon as poſſible, becauſe the danger of the child's death encreaſes every moment. How are we to decide, when there is no certain ſign to ſhew whether the woman is dead or not, eſpecially in the very moment in which ſhe dies. It is reported that *Veſalius*, * though ſo ſkilful an anatomiſt, was miſtaken in this point, and imprudently opened a perſon whom he thought dead, and in whom he found the heart ſtill beat after ſhe was opened.

I know of but one method of extricating one's-ſelf from this difficulty, and this I once made uſe of when I found myſelf in the like ſituation. Every thing concurred to perſuade me the perſon was dead, but before I conſented to have her opened, I cauſed two inciſions to be made in the buttocks, of a ſufficient ſize to cauſe ſome motion, if any life remained; but which could not prove fatal, and were even capable of being cured, if the perſon was not dead.

This operation ſhould be performed towards the eighth or ninth month of pregnancy, to give room to expect to ſave the child's life; but it may be performed ſooner, if the child ſhews any ſigns of life.

This operation ought ſcarcely to be undertaken, except when the mother dies of a ſudden death, as has been remarked in the preceding article. In lingering diſorders, ſuch as a ſlow fever, conſumption, dropſy, &c. or in violent diſtempers, as the pleuriſy, peripneumony, inflammatory fever, malignant fever, ſmall pox, &c. the child generally dies before the mother; nevertheleſs, as the doing it is attended with no riſque, prudence requires us to perform it.

* The editors of the laſt collection of Veſalius's works, printed in Holland, ſay ſo, in a letter, of Hubert Languet.

In this operation the integuments of the belly are to be boldy cut through, the inteſtines put on one ſide, and the womb cautiouſly opened, for fear of wounding the child, and the inciſion muſt be made large enough to extract it conveniently; the right-hand, ſmeared with pomatum, is then introduced into the womb, and the membranes are ruptured, if they were not ſo before, and the child extracted: a ligature is made on the navel-ſtring before it is divided; and leaving the care of ſewing up the belly to an aſſiſtant, the child is placed before the fire, and a few drops of ſugared wine are given it, and the uſual methods taken to revive it, which are deſcribed in the 5th chap. of the 2d book.

But the operations which are performed in the two other caſes, to extract a dead child from the belly of the living mother, or a live child, which cannot be delivered by any other means, are much leſs antient, and ſcarcely go farther back than the end of the ſixteenth century. Bauhine * relates, for truth, a ſtory of a ſow-gelder, who lived at Nortgaw, who, in the year 1500, performed an operation of this kind on a woman, following nearly the ſame method, which he practiſed in ſpaying ſows; but ſuch an example does not deſerve to be reckoned; ſo that it was hardly before 1565, that theſe operations began to be performed by ſurgeons.

Francis Rouſſet, † doctor of phyſic, of the faculty of Monpelier, and phyſician to the king of France, printed at Paris, in 1581, a treatiſe on this operation, intitled, *A New Treatiſe* ‡ *on Ceſarean Delivery, which is the method of extracting the child by a lateral inciſion into the belly and womb of the mother (who cannot otherways*

* In his appendix to the treatiſe of Francis *Rouſſet*.

† Varandæus, in his Treatiſe on the Diſeaſes of Women, in the laſt chapter of the ſecond book.

‡ Du Laurens, anatomy, book viii. chap. 32.

ways be delivered) without prejudicing the life of either, or preventing the mother being pregnant hereafter. This work made a great noiſe, and deſerved to do ſo: it excited ſome ſurgeons to follow the practice which was propoſed; ſo that Rouſſet, properly ſpeaking, is the author of this operation, at leaſt on living women, as well as of the name which he gave it, and it ſtill preſerves; for he declares, "that he gave it the "name of the *Ceſarean operation*, becauſe, according "to Pliny, Scipio Africanus, the firſt of the Roman "emperors, being extracted from the belly of his "mother, by an operation of this kind, bore the "name of Cæſar;" which is a manifeſt corruption of the paſſage of Pliny, which has been cited already, and which he himſelf quotes, though he did not underſtand it. (See pag. 166.)

This treatiſe contains ſix ſections: in the firſt, and moſt important, after having mentioned the neceſſity of the Ceſarean operation in many caſes, the author attempts to prove that this operation is not mortal, from four hiſtories, or obſervations, which have been communicated to him, and five which he declares he himſelf has ſeen, which does not ſeem to agree very well with the account he gives. In the ſecond, he attempts to prove, that the operation may be performed with ſucceſs; and for this purpoſe examines the nature of the parts which are to be cut through, to ſhew that they can be wounded without occaſioning any fatal accident. The third is a continuation of the ſame ſubject. In the fourth, he brings ſome obſervations of children dead and putrified in the womb, which have made themſelves an opening by degrees through the integuments of the belly; and of the womb being extirpated without any bad conſequences; whence he concludes there is nothing to fear from performing this operation. In the fifth, he endeavours to juſtify the Ceſarean operation, by the example of female animals, which

are ſpayed by taking away the womb; and from the certainty there is, according to his account, that the accidents which may ariſe from this operation, are not to be feared. Laſtly, the ſixth chapter is deſigned to prove, that this operation does not render women barren.

As ſoon as Rouſſet's treatiſe appeared, it was tranſlated into Latin, by Caſpar Bauhine, phyſician at Baſil, who added a diſſertation, in which he confirms the opinion of Rouſſet, by ſome new obſervations, reprinted at Baſil, 1582, under the title of *The exſection of a living child from a living mother, without danger of life to either, and without deſtroying the fertility of the woman: wrote originally in French, by Francis Rouſſet, tranſlated into Latin, with the addition of various caſes, by Caſpar Bauhine.* Theſe caſes are ſix obſervations communicated to Bauhine, by two French phyſicians, his friends, or taken from Felix Platerus.

Rouſſet's work, tranſlated by Bauhine, with Bowyer's diſſertation annexed to it, is to be met with in the collections of Gaſper Wolphius, and Iſrael Spachius.

The praiſes which Rouſſet and Bauhine beſtowed upon this operation made an impreſſion on many ſkilful ſurgeons, who thought themſelves authorized to make a trial of it, without incurring the cenſure of imprudence; but it ſucceeded ill in the hands of Guillemeau *, who made two trials thereof, in the preſence of Ambroſe Parey. It ſucceeded no better at three other different times, in the hands of three ſkilful ſurgeons of St. Coſme, which brought it into diſcredit, and made Ambroſe Parey condemn it highly; in which he was followed by ſeveral phyſicians and ſurgeons, and among others by Mauriceau.

On

* Mauriceau on the diſeaſes of pregnant women, book ii. chap. 33.

On the other hand, this operation has been approved by many other ſurgeons, and even ſome phyſicians; but what is moſt ſingular is, that father Theophilus Rainaud, a jeſuit, undertook to defend it, and compoſed a book on this ſubject, which was beyond his ſphere. Laſtly, Mr. Simon, a ſurgeon of St. Coſme, took the ſame ſide of the queſtion, in a memoir, in which he relates as many as ſixty-four new obſervations, of the ſucceſs of this operation.

But it is neither by the number nor weight of the votes, that this queſtion ought to be decided, at leaſt not till after having thoroughly weighed the reaſons on both ſides. This operation is condemned as mortal, in that an inciſion of ſix inches long at leaſt, is to be made through the integuments of the belly, and another of the ſame kind in the womb; it is true a few ſtitches are made in the wound of the belly, and even pledgets ſpread with proper ointments, may be applied, but the wound of the womb is forced to be left intirely to nature, without our being able even to know how it goes on. Laſtly, becauſe, notwithſtanding all the precaution that can be made uſe of, a part of the blood which diſcharges from the wound, and of the matter which will be ſoon formed, falls into the belly, and muſt cauſe a gangrene. It was from theſe reaſons that this operation was judged mortal, for the exceptions, if there were any, appeared to be ſo rare, that they thought they did not deſerve conſideration.

On the other hand, theſe reaſons were combated by contrary reaſons; but the eſpouſers of this operation principally reckoned on the ſucceſs which this operation had been attended with, both with reſpect to the children and mothers. Rouſſet had not failed, as has been ſeen, to make uſe of this argument, and report ſome favourable obſervations. Bauhine

picked up ſome more of them, and Mr. Simon has ſtill gone beyond them, in the memoir that has been juſt mentioned.

The queſtion would be decided, if theſe obſervations were as certain and concluſive as they pretend, and ſufficient to determine a judicious operator to follow this practice without ſcruple. It is with difficulty one can be perſuaded, that an operation which failed in the hands of the moſt ſkilful ſurgeons of Paris, has ſucceeded ſo well in the hands of ſurgeons, or to ſpeak more properly, country barbers: Of young ſurgeons, who had not the leaſt notion of anatomy, as in the ſixth hiſtory of Rouſſet, and in the ſecond of Bauhine's appendix, of a ſurgeon, who was drunk when he performed it; as in the fifth hiſtory of Rouſſet, of thoſe which are added in the Latin edition of his book, printed 1590: Laſtly, of a ſow-gelder, as in the firſt hiſtory of Bauhine's appendix. Such teſtimonies cannot eaſily be credited.

Fortunately, there is at leaſt one certain and inconteſtible obſervation, which ought to put an end to all theſe controverſies, from its not only proving that the Ceſarean operation may ſucceed, but that it has ſucceeded to the advantage of both mother and child. We owe this obſervation to Mr. Soumain, a ſkilful ſurgeon at Paris, who performed this operation there in 1740, with the greateſt ſucceſs, in the preſence of ſeveral eminent ſurgeons, and thereby ſaved the life of both mother and child. It cannot then any longer be denied, that this operation, dangerous as it is, for it cannot be thought otherwiſe, may be uſeful and ſucceſsful, which is ſufficient to authorize its being practiſed, in caſes where it is adjudged abſolutely neceſſary, according to the maxim of *Celſus*: "That in certain danger of death, "it is better to try a doubtful remedy than none."

The

The queſtion then is to determine the caſes in which this operation ſhould take place; in which we ſhould take care not to imitate thoſe who practiſed it ſo commonly, and have alledged the foregoing obſervations, for they uſed it when the child was placed croſſways, or in a bad poſture, or was dead, though the natural paſſages were ſufficiently free, as appears from this circumſtance, that moſt of the women who eſcaped this operation, and became pregnant again, were delivered eaſily in the common method; and when the paſſage is free, it is eaſy to extract dead children, or thoſe which are badly ſituated, frequently with the hands alone, when dexterity is joined with patience; or in every caſe by means of the forceps.

The ſame conduct ſhould be obſerved, when the matter in queſtion is to deliver a monſtrous or dropſical child, becauſe in this caſe, as has been already ſeen, there are eaſier methods of ſucceeding; and when the child is ſtopt by calloſities, tumours, or polipuſſes, in the neck of the womb or *vagina*; becauſe we know by experience, that nature alone frequently remedies theſe diſorders; however, they muſt be extirpated according to the rules of art; and by this means the woman will be expoſed to much leſs danger and pain, than if the Ceſarean operation was performed on her.

Upon mature conſideration, Mr. Levret, man-midwife to the Dauphineſs of France, who has treated of the Ceſarean operation, in a very judicious manner *, ſaw but two caſes in which it ſhould be practiſed, to which I think a third may be added, from Mr. Simon.

One of the caſes which Mr. Levret admits is †, *That in which there is ſo great a deformity in the bones of*

* Sequel of obſervations on the cauſes and accidents of moſt different labours, page 237.

† The ſame, page 243.

of the mother's PELVIS, *that it is mathematically demonſtrated, that a child at its full time cannot poſſibly paſs through this ſtrait.* This was the caſe of the woman, on whom Mr. Soumain performed the operation, which has been juſt mentioned, and in whom * *the lower part of the ſpine of the back and the* OS PUBIS *were ſo near together, that there was not more than two inches diſtance between them.* As this deformity of the *pelvis* is eaſily known by the touch, we are very certain, in this caſe, of the abſolute neceſſity of the operation, when it is performed.

The other caſe is† *when the child is formed without the womb, and is found contained in the cavity of the belly, in which it has arrived to its full time, without having loſt its life:* (which I think impoſſible) *or rather being dead, threatens the mother with the ſame fate.* To which may be added, pregnancies of the fallopian tubes, in which the mother's life cannot be ſaved without performing this operation, and is the caſe related by Abraham Cyprianus, profeſſor of anatomy and ſurgery at Frankfort ‡.

We may be aſſured of this caſe by examining the ſtate of the womb, which is found ſmall, and conſequently empty, while a conſiderable ſwelling on the right or left ſide is felt in the belly.

The third caſe, which I think ſhould be added is, that where, in a difficult labour, a child being ſtrong, and placed acroſs the womb, which is in this caſe particularly thin, ruptures its coats on one ſide or the other, either with its feet or head, and makes itſelf a paſſage into the cavity of the belly. This caſe is known, when in a difficult labour the child is no

* Mr. Simon, page 646 of his memoir.

† Mr. Levret as above, page 241.

‡ In his account of a human fœtus that was, after twenty-one months, cut out of the fallopian tube, whoſe mother ſurvived the operation.

no longer felt in the womb, but is felt in the cavity of the belly.

In the firſt caſe, where the child is contained within the womb, the whole operation muſt be performed, and both the belly and womb cut through, which makes the operation more dangerous. In the two other caſes, to extract the child from the cavity of the belly, there is only to make an inciſion through the integuments, which renders the operation leſs cruel, and attended with leſs danger.

OF

OF THE DISORDERS OF PREGNANT WOMEN.

WHEN a pregnant woman is attacked with any diſorder which has no relation to pregnancy, it is to be cured before delivery, if poſſible, contrary to the opinion of thoſe who inſiſt, that delivery will cure the diſorder, whatever it be; which experience proves to be bad advice, and frequently attended with worſe conſequences.

The firſt ſymptoms which appear after the menſes are ſuppreſſed, are a ſickneſs and vomiting, which proceed from the nerves of the uterus * being compreſſed, and from a fulneſs of the blood veſſels. If this complaint is not very violent, and does not continue longer than the third or fourth month, it is not dangerous; but if it continues with violence after that period, there is danger of a miſcarriage. In this caſe the patient muſt loſe blood from the arm, to the amount of about eight ounces, if her ſtrength will allow. If coſtive, laxative clyſters are to be adminiſtered, as occaſion may require, and the following draught ſhould be taken every ſix hours: Take ſalt of wormwood one ſcruple, lemon juice half an ounce, ſpirit of mint half an ounce, cinnamon water one ounce, and ſweeten it to the palate

* The nerves of the uterus communicate with thoſe of the ſtomach, and thereby occaſion theſe complaints. R.

palate with loaf ſugar. The diet ought to be light, eaſy of digeſtion, and taken in a ſmall quantity at a time, and frequently.

If the pregnant woman is troubled with a violent cough, ſhe muſt loſe blood according as her ſtrength will bear, and take inwardly the following mixture, leſt, from its long continuance and violence, it ſhould endanger miſcarriage. Take oil of ſweet almonds, and ſyrup of balſam of Tolu, each two ounces, nutmeg water an ounce and an half, ſimple mint water four ounces, ſpirit of ſal-ammoniac thirty drops, and mix them together.

Tho' the force of imagination in pregnant women is a prejudice which both reaſon and experience prove void of foundation; nevertheleſs, as a woman becomes dejected, uneaſy, and even her health affected, by being debarred from what ſhe particularly longs for, we ſhould endeavour to procure it as ſoon as poſſible.

From a full habit of body, or weakneſs of the veſſels of the *uterus*, it ſometimes happens that pregnant women continue to have their *menſes* till the fourth or fifth month, and even ſometimes during the whole of pregnancy. In this caſe, after the fifth month there is great danger of miſcarriage; and if the woman goes her time, the child is weak and ſickly. The cure muſt be begun with bleeding, in ſuch quantity as the patient's ſtrength will allow; internally the tincture of roſes, of the London diſpenſatory, with the tincture of bark, in the proportion of one ounce of tincture of bark to a pint of the tincture of roſes, may be taken four table ſpoonfuls every four hours. A cooling, ſpare, but ſtrengthening diet, is proper; the paſſions muſt be curbed, the patient kept quiet, and in a ſtate of reſt; and venery eſpecially muſt be abſtained from.

Pregnant women are alſo ſubject to a pain and ſwelling of the breaſt, owing to the fulneſs of the veſſels, from the ſuppreſſion of the menſtrual diſcharge. This complaint is not dangerous, and is removed, by giving occaſionally a gentle laxative, and, if attended with an inflammation, by loſing a little blood: The part ſhould be embrocated two or three times a day, with a little of the following mixture: Take oil of mucilages, and camphorated ſpirits of wine, each an ounce, and mix them together; after uſing this, cover the breaſt with flannel.

Pregnant women about the fourth month, when the child's motion firſt begins to be perceived, are often affected with a faintneſs and lowneſs of ſpirits, with a weak languid pulſe. In this caſe the following medicine is excellent: Take volatile tincture of valerian, and tincture of caſtor, each half an ounce. Thirty drops of this tincture are to be taken four or five times a day, when faint, in a glaſs of wine or water.

In a diarrhæa, malt liquors muſt be entirely abſtained from; harts-horn drink uſed freely, and the following bolus taken every ſix hours, until the diſorder abates: Take powder of rhubarb eight grains, toaſted nutmeg ſix grains, prepared chalk a ſcruple, ſyrup of white poppies as much as is ſufficient to give it the proper conſiſtence.

In coſtiveneſs, the quantity of a nutmeg of lenitive electuary may be taken occaſionally; or if the excrement is hardened in the bowels, laxative clyſters will be ſerviceable.

Pains in the back, loins, and hips, affect women towards the end of pregnancy, from the weight of the child, and diſtenſion of the womb, violent motion, or ſome external injury. In this caſe reſt is neceſſary, and every precaution muſt be uſed to prevent miſcarriage; bleeding is proper, and anodyne medicines;

medicines; the parts affected may alſo be bathed with opodeldoc.

From the preſſure of the child on the blood veſſels, which hinders the circulation, pregnant women are ſubject to ſwellings of the thighs and legs, ſometimes very painful; but this complaint is of no ill conſequence, and goes off after delivery: diſcutient fomentations, compoſed of chamomile flowers, juniper-berries and wormwood, may be ſucceſsfully uſed, but the principal point is to keep the legs continually reſting on a ſtool.

In women of a cold conſtitution, as has been already obſerved, there is often a collection of water in the womb, which is ſometimes diſcharged before the child is delivered, ſometimes afterwards. The *pudenda* are alſo diſtended ſo much, that it is proper to ſcarify them, to let out the water, which if the tumour was large, would hinder delivery; after which the part ſhould be fomented with the foregoing fomentation.

If a bearing down of the *uterus* or *vagina* happens, which is known from a great weight, or bearing down at the bottom of the belly, that occaſions a difficulty to walk, the part muſt be kept up as much as poſſible, by a proper poſture of the patient, and ſupporting the belly with a ſuitable bandage: reſt is abſolutely neceſſary in this diſorder.

The cauſe of flooding and miſcarriage, with the proper ſteps to be taken therein, have been already mentioned fully in the ſhort hiſtory of the Art of Midwifry; as alſo in the third article of the fourth chapter of the fourth book of this treatiſe. The preſſure of the child upon the bladder, frequently occaſions an incontinence or ſuppreſſion of urine. If marſh-mallow tea ſweetened with honey, and cooling emulſions with gum-arabic, do not preſently relieve, the only reſource is to draw off the urine with a catheter.

From the fullneſs of the *hemorrhoidal* veſſels from coſtiveneſs, preſſure of the child, or ſuppreſſion of the menſtrual diſcharge, pregnant women are ſubject to the piles; if they produce a conſiderable hemorrhage, attended with heat and pain, bleeding is neceſſary; if from coſtiveneſs, the quantity of a nutmeg of the following electuary, taken at diſcretion, will afford the greateſt relief: Take lenitive electuary one ounce and half, cream of tartar and precipitated ſulphur, each three drams, and mix them into an electuary.

With reſpect to exerciſe during pregnancy, women for the firſt three months (eſpecially with their firſt child) ſhould uſe as little exerciſe as poſſible, being more liable to miſcarry before that time than afterwards; from this period till towards the eighth month, moderate exerciſe may be ſafely uſed, provided violent motions are avoided, ſuch as jolting in a coach, walking much up and down ſtairs, &c. Towards the eighth month the child turns for delivery; therefore at this time it is proper the mother ſhould be kept ſtill and quiet, for a very little matter will occaſion the child's taking a bad poſture, beſides the danger of diſplacing the womb, which is now very heavy, wherefore from this time till delivery, too little exerciſe cannot be uſed, and thoſe perſons who jolt themſelves about towards the approach of labour, in hopes of a more favourable delivery, riſque the cauſing one of the moſt difficult and dangerous kind, for the bottom of the womb being now quite looſe and unſupported by its ligaments, may by any ſudden motion be turned from its natural poſition, and thereby occaſion difficult labour.

The method of diſtinguiſhing true labour pains from falſe, has been already ſhewn. To remedy falſe pains, give a carminative clyſter, apply warm napkins to the belly, keep the woman ſtill, and

give

give the following anodyne: Take of the ſapona-ceous pill of the London diſpenſatory ten grains, and diſſolve it in two ounces of ſimple pepper-mint water, to be taken as often as occaſion requires.

Of the diſorders of women after delivery.

A ſuppreſſion of the *lochia* after delivery, is of the moſt dangerous conſequence, and if not removed generally kills the patient; if the woman is full of blood, it will be proper to bleed, in order to leſſen the fever, which in this caſe always runs high: emollient fomentations applied to the belly, are of great ſervice; as are alſo clyſters rather ſtimulating; internally, the following medicines are to be given: Take compound powder of contrayerva root and ſperma-ceti, each ten grains, compound powder of myrrh and caſtor, each ſix grains, and mix them into a bolus, with the ſimple ſyrup, which may be taken every four hours, with four large ſpoonfuls of the following julap: Take ſimple penny-royal water five ounces, hiſteric water two ounces, ſyrup of ſaffron one ounce, tincture of caſtor and tincture of valerian, each one drachm, mix them together: An immoderate flux of this diſcharge is to be treated in the ſame manner.

If the pains which happen after delivery, and are called after-pains, prove moderate, they are ſerviceable, by promoting the flux of the *lochia*; but if too violent, an anodyne may be had recourſe to.

The milk fever is ſometimes accompanied with an inflammation of the womb, which, if not diſcuſſed, generally proves fatal. The propereſt method to remove this diſorder is to keep the woman under a gentle diaphoretic regimen, and to bleed according to the urgency of the ſymptoms. The belly ſhould be rubbed with oil of mucilages, in which a little camphire has been diſſolved.

A *procidentia ani*, or bearing down of the gut rectum, is ſometimes the conſequence of a difficult labour; this muſt be replaced as ſoon as poſſible, by laying the woman on her belly, applying emollient fomentations, and gently preſſing up the part, whilſt the woman draws up her breath as ſtrongly as poſſible to hinder its return; reſtringent fomentations are alſo uſeful.

The bearing down of the womb, and its method of cure, have been already deſcribed in the firſt chapter of the 5th book, as has alſo the laceration of the *perinæum*, and the ſwelling of the breaſts from the ſtagnation of the milk.

OF THE DISORDERS OF NEW-BORN CHILDREN.

TO promote the evacuation of the *meconium*, a tea ſpoonful of ſyrup of violets, mixed with an equal quantity of oil of almonds, may be given now and then. The pap ſhould be made very thin, and given but very little at a time; for want of this caution many children have been loſt.

If the ſutures of the child's head are more open than ordinary, care muſt be taken to keep the part warm, and a moderate bandage will alſo be of ſervice.

With reſpect to the bearing down of the fundament, the child muſt be laid on its belly, and the inteſtine gently preſſed up with warm cloths. A fomentation of warm milk and water may be uſed till it is replaced: to prevent its return, the part may be fomented with a decoction of pomegranate bark and balauſtine flowers, boiled in an equal quantity of red wine and water.

Children are ſubject to the gripes, which are ſometimes occaſioned from the child's ſucking too plentifully, in which caſe abſtinence from the breaſt for a little while, removes the complaint; a juniper berry or two, or a little powder of anniſeeds, boiled in its victuals is good. But a few grains of *magneſia alba*, proportioned to the age and ſtrength of the child, is beyond every other remedy.

If the child's navel is inflamed, from the navel-ſtring's coming off too ſoon, a little Turner's cerate is the beſt application.

Children have, about the third or fourth month, eruptions, which are called the *red-gum*. Theſe ſhould not be repelled by external applications, but the child kept warm, and the *magneſia alba* adminiſtred in proper doſes.

The *thruſh* is not attended with danger, unleſs the fever is very high. The mouth ſhould be waſhed frequently, with the following gargariſm: Take ſpring water four ounces, ſyrup of mulberries one ounce, ſpirits of vitriol twenty drops. A gentle purge is to be given between whiles.

The jaundice alſo affects young children, and if neglected, ends in a watry looſeneſs, which proves fatal. The *magneſia alba*, given in proportion to the child's ſtrength, certainly removes this diſorder.

A looſeneſs, if moderate, is not to be ſuddenly ſtopt in young children, but if it be violent, from a quarter of a grain to a grain of *ipecacuanha*, may be given every fourth hour; or three or four grains of rhubarb every other day, if the ſymptoms are not ſo preſſing.

Any violent motion, as vomiting, coughing, crying, &c. may occaſion a rupture in children, which is to be cured by replacing the inteſtine, and applying a proper truſs.

Diſcharges from children's ears are ſerviceable, and ſhould be by no means ſtopped; a few grains of rhubarb, once or twice a week, is all that is neceſſary to be done when they abate.

The cutting of the teeth is always attended with feveriſh ſymptoms, which often bring on convulſions; they are to be removed by bleeding, either in the arm or with leeches, and by the uſe of the *magneſia alba*; and cutting through the gum quite to the tooth, when the gums appear much inflamed.

Children

Children are alſo ſubject to the hooping-cough; bleeding, contrary to the opinion of ſome practitioners, is in general prejudicial; the beſt medicine is a tea-ſpoonful of the following mixture: Take two drachms of the paregoric elixir, four ounces of penny-royal water, and one ounce of ſyrup of balſam of Tolu, mix them together, to be taken as often as occaſion requires.

A gentle purge ſhould alſo be adminiſtered every other day, if the child's ſtrength will permit.

The Rickets is alſo a diſorder, which of late years has attacked children; it is in general owing to bad nurſing, bad food, and unwholeſome air. Its cure is to be attempted by light nouriſhing aliment, taken often; by the uſe of the cold bath, exerciſe, and a courſe of alterative medicines. *Boerhaave* particularly recommends a grain or two of *flores martiales*, in a ſpoonful of ſack or canary, every evening, for three weeks or a month.

AN

ANSWER

TO A

Caſuiſtical letter from M. D. F. B. on the conduct of Adam and Eve, with reſpect to their firſt children.

YOU are engaged, Sir, in a diſpute with a modern philoſopher, concerning the manner in which Adam and Eve acted, with regard to the navel-ſtring and after-birth of their firſt child. "*Did they make a ligature thereon, and divide it?*" as is the preſent practice. The objection againſt this is, *how ſhould they learn this practice? Who taught it them?* they themſelves were created without a navel, and had never ſeen a child born. *If they had not made a ligature thereon, and divided it, their children muſt have periſhed.* This is a truth univerſally acknowledged by phyſicians, and the whole race of mankind muſt have been extinct.

You obſerve, Sir, that this objection embarraſſes you, and deſire that I would point out a method of anſwering this queſtion. But you ſeem very much daſhed by the air of ſufficiency and raillery with which it is propoſed: are you unacquainted that this is the way of theſe kind of gentlemen? Full of an opinion of their own underſtanding, they think that the ſlighteſt difficulty raiſed by them muſt overthrow the moſt reſpectable truths. But they do not long enjoy this vain triumph: We anſwer them, and they are confounded. Like him of whom Horace ſpeaks *, *Qui fragili quærens illidere dentem offendet ſolido.* This is exactly the caſe of your philoſopher; nothing can be more frivolous than his objection: I ſend you three or four anſwers, in order to give him his choice; they are all plauſible, and I might ſay they are all ſolid.

* Firſt ſatire, ſecond book.

ANSWER I.

ADAM muſt have been ſurpriſed at the birth of Cain, to ſee a ſhapeleſs maſs, known at preſent by the name of the *placenta*, hang to the navel by a long ſtring. It is plain that he would not dare to meddle with it, for fear this maſs ſhould be part of the child's body. In this country, a like *placenta* full of blood, from the ſtronger and more plentiful nouriſhment of the woman, would ſoon contract putrefaction; but there is reaſon to think, that in the country where Adam dwelt, much hotter than our climate, it would dry up, eſpecially, if we conſider, that it muſt contain leſs blood, from the ſparing nouriſhment of Eve, who lived upon fruits; but it does not ſignify, ſuppoſe it tended ſoon to putrefaction, as it does in this country: Adam and Eve could not have been long incommoded by it, for about the fifth or ſixth day, the navel ſtring muſt ſeparate, and the child get rid of this extraneous body.

Adam profited no doubt, from this obſervation; he muſt underſtand, that this maſs did not at all belong to the body of the child, and that it might and ought to be ſeparated therefrom. Thus profiting by his reflections, he cut the navel-ſtring of Abel, his ſecond child, and finding that a little blood diſcharged from the navel-ſtring, he made a ligature upon it. Thus the ligature and cutting of the navel-ſtring was known and practiſed by Adam, from the birth of his ſecond child, and conſequently mankind preſerved.

ANSWER II.

ADAM was acquainted with the nature of animals, ſince, during his reſidence in terreſtrial paradiſe,

diſe, he gave names to every one, which expreſſed their qualities *. He muſt have known then, from having ſeen it frequently, that the young of every kind of quadrupeds were brought forth with a ſhapeleſs maſs, adhering to their navel by the navel-ſtring. He muſt have known alſo, that the females of theſe animals, even thoſe which did not live on fleſh, eat this maſs or *placenta*, cut the navel-ſtring with their teeth, and thus freed their young ones from it.

Adam muſt have profited by theſe examples, when his wife, driven with him from terreſtrial paradiſe, began to bring forth children. I do not pretend to aſſert that Adam eat their after-births; but he might very well have divided the navel-ſtring with his teeth, as was cuſtomary with the ſavages of *Brazil*, when the French firſt arrived there, according to the teſtimony of John Lery, in the account of his voyage to the Brazils, chap. xvi. At leaſt Adam muſt have judged, that ſince he could, without danger to the child, divide the navel-ſtring with his teeth, he might divide it in any other manner, which he certainly did. It is true, that perceiving blood flow from the end of the navel-ſtring, which was connected to the child, he tied it: thus behold the ligature and cutting the navel-ſtring eſtabliſhed, and the human race preſerved, even in this ſecond ſuppoſition.

Answer III.

I go ſtill farther, and ſuppoſe, that Adam, who diſliked the after-birth and navel-ſtring, which hung to the navel of *Cain*, tore them off; what would have been the conſequence? Your philoſopher anſwers, the inevitable death of Cain: ſuch is the unanimous opinion of all phyſicians, as he pretends; but he is miſtaken. We tear both conſtantly from all calves, the moment of their birth, without any hemorrhage

* Geneſis ii. 21.

hemorrhage happening: We tear them alſo from young pigs, without the leaſt danger. We often tear them from human fœtuſes through imprudence, without any fatal accident. Two diſſertations on this ſubject, by John Henry Schultz, profeſſor of phyſic at Hall, may be conſulted, both in the *Collection of anatomical Theſes*, publiſhed by Dr. *Haller*, vol. v. *One on the umbilical veſſels of children and adults*: the other, *whether the ligature of the umbilical cord is abſolutely neceſſary in new-born children*, which he denies; and that of John George Roederer, profeſſor at Gottingen, a celebrated man-midwife, printed in the ſecond part of his medical tracts, and intitled, *The Ligature of the Navel-ſtring in new-born children, not abſolutely neceſſary*. In theſe diſſertations theſe phyſicians quote ſeveral authors, who have been of the ſame opinion, and have related ſeveral obſervations of children, on whom no ligature was made, yet nevertheleſs lived.

It is true, a great number of contrary obſervations are oppoſed to theſe, which might decide, that the ligature of the navel ſtring was always neceſſary, if a judgment ought to be formed of what was done in the beginning of the world, from what is done at preſent in this reſpect; but we ought to form our judgment on a more certain principle: God has provided for the preſervation of the young of all quadrupeds, which are born with an after-birth, as well as children, without their having occaſion for any aſſiſtance; hence there is reaſon to conclude, that he had at leaſt as much care for the preſervation of children, which are the nobleſt of his works, and conſequently eſtabliſhed for them wiſe rules, in the order of nature, to effect every thing which was neceſſary for their preſervation, and would not have left to man the care of providing by their ſkill, for what he neglected to do himſelf.

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This conſequence becomes almoſt a demonſtration, if we compare the change which happens to the navel-ſtring, with the other changes which are effected in children at their birth. An arterial canal, and the *foramen ovale* were neceſſary to maintain the circulation of the blood, while the child remained in its mother's womb without breathing, but this communication became uſeleſs as ſoon as it began to breathe, and then cloſes up. The umbilical veſſels alſo are neceſſary for the nutrition of the child before birth, but they are of no farther uſe when it is born; they muſt then cloſe themſelves of their own accord, for it is not worthy of God, to ſuppoſe he left his work imperfect, and abandoned it to the care or ſkill of man.

The mechaniſm deſtined to effect this change may be ſeen in the conformation of the child's body; the navel ſtring is formed of a vein and two arteries; during the time the child remains in its mother's womb, theſe veſſels, neceſſary for its nutrition, are full of blood; but as they are of no farther uſe when it is born, they then change their ſtate: nothing paſſes through the vein; it therefore muſt cloſe up, from the elaſticity of its coats. In the umbilical arteries, if any blood ſtill circulates, it is very little, from the change which has happened in the direction of the *iliac* arteries, whence they take their riſe. Theſe arteries are curved during pregnancy, becauſe the infant is rolled up like a ball, and its thighs are bent againſt its belly. In this poſition, the trunk of theſe arteries, which is below this elbow, can receive but little blood, and the greateſt part muſt then paſs into the umbilical arteries, whoſe origin is above the curve which theſe arteries form. But every thing is changed as ſoon as the child is born; the legs are extended, and a direct paſſage opened for the blood into the

iliac arteries: it no longer paſſes into the umbilical arteries, or, at leaſt, but in a very ſmall quantity; and, conſequently, theſe arteries being empty, or leſs full than they ought, muſt, as well as the umbilical vein, be cloſed from the elaſticity of their coats, and be obliterated.

This is not all yet: the elaſticity of the tendinous circle, which forms the circumference of the opening of the navel, was counterbalanced by the umbilical vein and arteries, while theſe veſſels were full of blood; but as ſoon as theſe veſſels are empty, or leſs full than uſual, this elaſticity muſt get the better, and, by contracting, finiſh the cloſing of theſe veſſels, ſo as to hinder any diſcharge of blood, which affords the means of tearing off the navel-ſtring in certain caſes, or at leaſt neglecting to tie it, without any danger, as has been frequently obſerved.

Theſe advantages muſt have been greater in the children of our firſt parents, becauſe Eve, who was ſober and laborious, furniſhed her children with little blood, and conſequently their veſſels muſt have been leſs dilated: beſides, her children were ſtronger, their fibres were more elaſtic; and hence the coats of their blood-veſſels muſt have been contracted quicker, and more ſtrongly. Thus, in Eve's children, the navel-ſtring might cloſe of itſelf, without a ligature. This advantage remains ſtill in animals, becauſe they continue to live as they have always done; it ſubſiſts no longer in us, or but very rarely, becauſe we have deviated from our firſt parent's regimen. Women with child eat a great deal of meat, and other juicy aliments, conſequently make a great deal of blood, and furniſh a large quantity to their children, which renders their umbilical veſſels very large. On the other hand, the effeminate life they lead weakens their children, and renders their fibres lax, and improper to cloſe theſe large veſſels; for which

which reaſon we are obliged to make a ligature on the navel-ſtring, to ſupply the defect of both theſe cauſes.

I finiſh, Sir, this digreſſion, and conclude, from what has been ſaid, that Adam might have torn away the navel-ſtring from *Cain*, without the leaſt danger of hurting him, or deſtroying the human race, as your philoſopher has endeavoured to perſuade you: it is true, that, as he perhaps ſaw, from tearing the navel-ſtring off in this manner, a bloody ſeroſity ooze from the navel for ſome time, he might have taken the method of tying the navel-ſtrings of the reſt of his children, as is the practice at preſent.

Thus you ſee, Sir, ſeveral anſwers to your philoſopher's objection: you may give him his choice; they are all plauſible and concluſive. For my own part, I do not adopt either of them, and you will be perhaps ſurprized at it; but I think your philoſopher can be anſwered in a more general and deciſive manner, which I ſhall communicate in the following anſwer.

ANSWER IV.

I AM of opinion, Sir, that he who taught the birds which he created, and which had never ſeen a neſt, to build them with marvellous art, to lay their eggs in, firmly fixed to the branches of trees, lined within with moſs, wool, and feathers, proportioned to the ſize of their young; that he alſo inſtructed Adam and Eve in the manner in which they ought to act at the birth of their children, in order to preſerve them, ſuppoſing their aſſiſtance was neceſſary. This might be, if you chuſe it, by an inſtinct, which would be in the ſequel weakened or effaced *, when

* Thus tame pigeons and doves have loſt the inſtinct of making their neſts, ſince we have made them for them, whilſt wild pigeons and doves have preſerved it.

they began to act by the light of reaſon, and had no more occaſion to truſt to inſtinct; or, which I think moſt probable, this might be by an expreſs revelation. But it is not likely that God, who taught all the quadrupeds how they ſhould act to preſerve their young at their birth, has abandoned man, who is the moſt perfect of his creatures, to ignorance, in the like caſe.

It is not ſurpriſing that God inſtructed Adam how to act to preſerve his offspring. It is certain that he has condeſcended to give inſtructions to mankind, in the beginning of the world, on ſubjects of much leſs importance *.

Adam, whilſt in the terreſtrial paradiſe, gave to every kind of animal a proper name. He had then a language, and a language which was copious, of which he knew the value of all the words; and how could he have acquired naturally, and in ſo ſhort a time, a knowledge which is the fruit of long uſe, and profound ſtudy †?

Cain, the eldeſt ſon of Adam, was a labourer, *and offered to God the fruits of the earth* ‡. Who taught him to cultivate the earth? who ſhewed him the neceſſary tools for this purpoſe? Laſtly, Tubal Cain, the ſeventh deſcendant from Adam, exerciſed the art of working with an hammer, and was ſkilful in every kind of work in braſs, and iron §.

Iron and braſs were known then at this time, and how could they be known. Theſe metals are hid in

* And out of the ground the Lord God formed every beaſt of the field, and every fowl of the air; and brought *them* unto Adam, to ſee what he would call them; and whatever Adam called every living creature, that *was* the name thereof. Gen. ii. 19.

† Who firſt, which ſeemed to *Pythagoras* the higheſt-wiſdom, gave names to all things, or who marked the ſounds of the voice, which ſeemed infinite, with a few letters? Cicero Tuſc. Queſt. book i. chap. 11.

‡ Geneſis, chap. iii. ver. 2, 3.

§ Geneſis, chap. iv. ver. 22.

the

the bowels of the earth, under a form which renders them not eaſy to be known, and it is not but by repeated operations that they can be made appear in their natural form. At the time of Tubal Cain, could they have been able to find mines which furniſhed iron and braſs; and could they have diſcovered the method of preparing them? Certainly not: how then can a reaſon be given for all theſe facts, unleſs by acknowledging that it was God, who taught Adam the language which he ſpoke; Cain, the art and method of cultivating the earth; Tubal Cain, the neceſſary knowledge to find metals, prepare and work them; and, in the like circumſtances, why not ſay alſo, that God taught Adam the manner in which he ſhould act for the preſervation of his offspring, ſuppoſing he had left any thing to his care.

ANSWER V.

HITHERTO, Sir, I have only furniſhed you with the means of anſwering your philoſopher: it is time to change the ſcene, and, by retorting his argument, oblige him to anſwer himſelf. Theſe gentlemen think themſelves very ſtrong when they attack, but are very weak when obliged to defend themſelves; to this it is eaſy to reduce your philoſopher.

Mankind exiſts: it muſt then either have begun to exiſt by the will of God, who created it; or exiſts neceſſarily, and from all eternity.

If your philoſopher takes the firſt ſide of the queſtion, his opinion will only differ from the belief of the church, in allowing too great antiquity to the world; and, in ſuppoſing that it is fifty hundred thouſand years ſince it was created; ſuppoſing this, you bring on his Adam and Eve, that is to ſay, on the

the firſt man and woman which God created, according to him, a hundred thouſand years ago, the objection which he makes to you concerning your Adam and Eve, created about ſix thouſand years ſince; and you may tell him, that you will uſe that argument to anſwer him, which he adopts himſelf to get out of this embarraſſment. But if he embraces the other opinion, and dares maintain that mankind exiſts neceſſarily, and from all eternity, he muſt admit a neceſſary and eternal ſeries of individuals entirely contingent, which is a palpable abſurdity, and contains a manifeſt contradiction. *A neceſſary ſeries of contingent individuals!* It does not ſignify, Sir; no quibbling; the men of this ſeries either learned by repeated obſervations, the neceſſity of tying the navel-ſtring of their children; and in this caſe, before they had acquired this knowledge, mankind had the whole interval of time to periſh; or this knowledge was in them neceſſary and innate, which is a new abſurdity, at which we ought not to be ſurpriſed, for one abſurdity begets another. In this caſe, you may tell him, that you admit alſo, in the firſt men of your created ſeries, the ſame innate knowledge, but not at all neceſſary, for it is God which gave it them; that is to ſay, you beat him with his own weapons, after having taken away their impiety. Shew this to your philoſopher; if he will read it attentively, I flatter myſelf he will abate of his confidence in his own opinions. But I could wiſh my reflections might meet with a more happy ſucceſs, bring him back to reaſon, and engage him to have more reſpect for revealed truths.

FINIS.